Summary of Townsite Soils Data for Rico, Colorado

Prepared for:

Atlantic Richfield Company
Denver, Colorado

and

ESA Consultants, Inc.
Fort Collins, Colorado

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1. INTRODUCTION

This report summarizes the data generated to date on soils in the area of Rico, Colorado.

Two sets of soils data are available for the vicinity of Rico. The first was collected by Walsh Environmental Scientists and Engineers, Inc. (Walsh) in 1994 as part of a Phase I and Phase II Environmental Site Assessment for Rico, Colorado, prepared for Rico Renaissance, L.L.C. Forty-eight soil samples were collected, targeting areas of interest to the development company and attempting to evaluate properties that contained elevated metals concentrations. Results from the Walsh study provided information on environmental conditions associated with specific properties marketed for sale. Soil sampling locations were specifically targeted toward areas that were known or suspected to contain elevated metals concentrations. Of the locations sampled, 13 were in commercial/residential areas, and 7 locations were considered background. Additional information is provided in the Phase I and Phase II Environmental Site Assessment, Rico, Colorado (Walsh 1995).

A second data set was collected by PTI Environmental Services (PTI) in May 1995. These data were collected specifically for the purpose of characterizing concentrations of metals in Rico soils. Sampling sites were chosen by overlaying a grid on the map of the Town of Rico and randomly selecting locations on the grid. Potential sampling sites that were close to Walsh sites were relocated on the grid to minimize any duplication in coverage. Of the 73 soil samples collected in this effort, 32 were considered residential surface soils, 20 were considered background surface soils, 20 characterized soil concentrations at depth at 10 residential sampling locations, and 1 was a sample of mine waste. Both the PTI and Walsh sampling locations are shown on the figures referenced in this report. Additional information regarding the specific sample locations or sampling strategy can be found in the Field Guidance Document (PTI 1995). In addition, PTI mapped the surficial geology in the Town of Rico and the surrounding area. The surficial geology map and a description of the map units are included in Appendix A.

2. DATA COLLECTION METHODOLOGY

2.1 PHASE I AND PHASE II SITE ASSESSMENTS (WALSH 1995)

A total of 48 soil samples were collected from the study area. Sampling locations were selected to include fill and mine waste materials, as well as residential soils. Samples consisted of both discrete and composite samples; the latter comprised subsamples from two to four areas within a claim or town parcel. Soil sample depths varied from 0 to 7 inches, although fill samples were collected from >7 inches depth. The composition, sample type, depth increment, and location of each soil sample collected are described in Table B-1 (Appendix B). Sample locations for the Walsh study are indicated on the arsenic and lead distribution maps in Appendix A.

All soil samples were collected using a shovel that had been decontaminated with Alconox and deionized water. Soil was placed into a Ziploc plastic bag or glass jar, stored in a cooler on ice, and shipped to the lab under chain of custody. The samples were analyzed for metals as detailed in Section 2.2.1. Laboratory analytical data sheets and quality assurance/quality control sample results can be found in Appendix G of the Walsh report.

2.2 PTI SAMPLING EVENT (PTI 1995)

The objectives of the PTI sampling event were as follows:

- Residential soil samples were collected and analyzed to evaluate metals concentrations in the town of Rico.
- Background soils were sampled to determine site metals concentrations in native soils. Background soil samples were collected from areas where no human disturbances were evident.
- Soil composition within and adjacent to the town of Rico was characterized to support mapping of surficial geology. The resulting map (Appendix A) was used to evaluate the relation between surficial geology and metals concentrations in surficial soils.

Residential sample locations were selected using a combination of a random grid and targeted samples to achieve a spatially representative sampling scheme. Residential areas that had been characterized in the Walsh study were excluded from the sample grid. To avoid bias in the collection of residential samples, 30 of the 40 townsite sample locations were selected randomly from the nodes of a 350-ft grid superimposed over the town. Sample locations that fell within 175 ft of a sample location from the Walsh investigation were excluded. The precise locations of each sample were determined in the field based on potential for exposure (i.e., bare areas and play areas were selected preferentially).

An additional 10 sample locations were selected to provide complete sampling coverage of surficial soils in the proximity of existing residences in Rico. Residential sampling locations are

indicated on the maps in Appendix A, and Table B-2 (Appendix B) contains a list of sampling locations by address, or legal or colloquial description, as available. In addition, 10 townsites were chosen for subsurface sampling at depth intervals of 2–10 inches and 10–18 inches, in addition to 0- to 2-inch surface samples.

The purpose of collecting background samples was to determine what soil metals concentrations would have been in Rico if mining had not occurred there. The geology in the Rico area is characterized by extensive mineralization, and it is therefore important to quantify the effect of this mineralization on metals concentrations in natural soils. Background sample locations are indicated on the maps in Appendix B. Selected sites contained soils proximate to exposed bedrock outcrops, landslides, and undisturbed hillside areas, and undisturbed areas in town. Background samples were collected from areas that exhibited no observable human disturbances, and thus, had a limited potential to be affected by mining activities. Characteristics of the townsite background soils, including geomorphology, soil type, and mineralogy, were recorded in the field, and the field data forms are included in Appendix C.

2.2.1 Sampling and Analytical Methods

Residential and background soil samples were collected as composites of five subsamples at each station location. Subsamples were collected from the central station location and from four other locations approximately 5 ft from the central station location. The subsample locations were in cardinal positions (i.e., 5 ft in a north direction, 5 ft in an east direction, etc.) with respect to the central station location. Each subsample was collected from the 0- to 2-in. depth interval after surface vegetation (if any) had been carefully cleared. Approximately equal volumes of soil were collected from each subsample location using stainless steel spoons. The soil was homogenized with soil from the other subsample locations in stainless steel bowls, and placed in appropriate bottles in accordance with PTI SOP-39a (PTI Standard Operating Procedures are included in the Field Guidance Document [PTI 1995]). Decontamination procedures for field sampling equipment are described in SOP-3 (PTI 1995). The background soil samples were described in the field in terms of overall color, texture, parent material (i.e., rock type), proximity to outcrops of bedrock, presence of sulfide minerals (e.g., pyrite), oxidation (e.g., iron oxides), and alteration (e.g., propylitic). In addition, soil samples were described using the Unified Soil Classification system, as described in SOP-49. Soil samples were sieved to < 2 mm and analyzed for arsenic, cadmium, copper, lead, manganese, silver, and zinc.

Multiple analytical methods were used in analyzing for the EPA target analyte list (TAL) metals, because particular metals can only be analyzed using specific methods. The analyses for metals in both the Walsh and PTI studies were completed according to SW-846 Method 6010 using inductively coupled plasma–atomic emission spectrometry (ICP), Method 7470 using cold vapor atomic absorption spectrometry (CVAA), Method 7060 using graphite furnace atomic absorption spectrometry (GFAA) (U.S. EPA 1991a), and EPA Method 200.8 using inductively coupled plasma/mass spectrometry (ICP/MS) (U.S. EPA 1991b).

The conventional analytes were determined using EPA Methods 325.3 for chloride, 340.2 for fluoride, 335.2 for cyanide, 130.2 for hardness, 160.1 for total dissolved solids, 160.2 for total suspended solids, 300.0 for sulfate, and 376.1 for sulfide (U.S. EPA 1983).

2.2.2 Surficial Geology Mapping Activities

In compiling the surficial geology map (Appendix A), soil characteristics were evaluated qualitatively at all sampling locations with respect to soil geomorphology, including soil type, presence of fill material, and mineral characteristics. Evaluation of surficial geology entailed visual observation of soil characteristics, visual delineation of prevailing soil type and/or fill material, and identification and plotting of observed characteristics on a site map. Geologic characteristics were assessed at all sampling locations, as well as areas visible from public access points and areas identified through conversations with residents.

The surficial geologic map displays the areal extent of surficial material composition around and within the Town of Rico. The map units described in Appendix A include 14 primary materials that were found in the map area, plus three combination units, which contain multiple basic materials. These areas were mapped as combination units, although the relative percentage of each material was not specified.

Alluvium, colluvium, and fan alluvium units were encountered primarily on the slopes to the west and east of the Town of Rico. Disturbed alluvium, disturbed colluvium, disturbed fan alluvium, fill, and pavement units were associated with residential areas. The area of Rico to the north of Silver Creek and east of the Dolores River is primarily disturbed colluvium. Disturbed fan alluvium was located in central Rico on the terrace above the Dolores River channel. Disturbed alluvium was encountered within the Dolores River channel and on the current depositional fan of Silver Creek. Disturbed colluvium and fill were also associated with gravel road construction outside residential areas. The coal-cinders unit was found along the old railroad tracks in the Dolores River channel. The waste-rock carbonate (WRC) unit was associated with waste dumps from the Van Winkle, Atlantic Cable, and Shamrock mines on the northern end of Rico. The waste-rock non-carbontate (WRNC) unit is associated with waste-rock dumps of the Santa Cruz, Iron Clad, Rico Boy, and Silver Swan mines, located in the southern end of Rico. The tailings unit was mapped in the Pro Patria and Columbia tailings piles. The slag unit was encountered at the Grand View smelter site near the north end of town, and near the Columbia tailings at the south end of town. The debris unit was encountered in the Dolores River channel, along the slope east of the Columbia tailings, and was associated with dilapidated buildings throughout the region.

Soil sampling locations are noted on the surficial geology map. Residential soil sampling locations were selected primarily from areas that had been disturbed by historical residential or commercial use. Units present in the residential soil sample locations are disturbed alluvium, disturbed colluvium, disturbed fan alluvium, fill, coal-cinder, WRC, WRNC, and debris units. Several of the residential soil samples from the outskirts of the Town of Rico were collected in alluvium and colluvium units. Background samples were collected only from alluvium and colluvium units.

2.2.3 Photographic Documentation

In addition to sampling and mapping, field personnel took photographs to record and verify key information. A log of all photos generated is included with this report (Table B-3, Appendix B), and copies of individual photos can be requested by writing or calling PTI's Boulder, Colorado office (see title page for address and phone numbers).

3. TOWNSITE SOILS DATA

Surface soil concentrations were determined for arsenic, cadmium, copper, lead, manganese, silver, and zinc. The complete combined data set for Rico residential and background surface soils is summarized in Table 1, and laboratory analytical data sheets are included in Appendix D. Table 1 also contains data for soil samples collected from the Dolores River corridor, which is considered to be undeveloped in terms of land use. Table 1 also provides summary statistics for the various sample subsets, including residential and background soils. These statistics include the sample size, minimum and maximum values, the arithmetic mean of the data points, and the 95-percent upper confidence limit of the mean (UCLM). The data can be summarized as follows:

- Arsenic concentrations in residential soils ranged from below the detection limit (10–20 mg/kg) to 62 mg/kg (arsenic concentrations are plotted on a site map, which is included in Appendix A). Background soils contained arsenic at concentrations of 8 to 43 mg/kg, although none was detected in six samples (detection limits of 10–20 mg/kg). The arithmetic mean concentration in residential soils was 26 mg/kg; the background mean was 19 mg/kg. The UCLM of residential soils was 33 mg/kg, compared to 25 mg/kg for background soils.

- Cadmium concentrations in residential soils ranged from below the detection limit (0.6 mg/kg) to 57.0 mg/kg. Background soils contained cadmium concentrations ranging from undetected (detection limit of 0.7–1 mg/kg) to 10.9 mg/kg. The arithmetic mean cadmium concentration in residential soils was 14.2 mg/kg (UCLM = 25.2 mg/kg), compared to a background mean of 3.0 mg/kg (UCLM = 5.3).

- Copper was detected in all townsite soil samples (except the Lots 17–20 and School Lots samples, which were not analyzed for copper in the Walsh study), at concentrations ranging from 28 to 724 mg/kg. Walsh did not analyze for copper in five background samples, but concentrations in the other 23 background samples ranged from 23 to 210 mg/kg. The mean residential soil copper concentration was 172 mg/kg (UCLM = 217 mg/kg), compared to a mean background concentration of 62 mg/kg (UCLM = 81 mg/kg).

- Lead was detected in all townsite soil samples. Reported lead concentrations ranged from 105 to 5200 mg/kg (lead concentrations are plotted on a site map [Appendix A]). Background concentrations ranged from 57 to 1310 mg/kg (eight reported concentrations were qualified by PTI as estimated). The mean residential soil lead concentration was 1439 mg/kg (UCLM = 2541 mg/kg), compared to a background mean of 238 mg/kg (UCLM = 320 mg/kg).

- Manganese was detected in all townsite soil samples (except the Lots 17–20 and School Lots samples, which were not analyzed for manganese in the Walsh study) at concentrations ranging from 564 to 6240 mg/kg. Background concentrations ranged from 552 to 11,300 mg/kg (five of the samples collected by Walsh were not analyzed for manganese). The arithmetic mean residential soil concentration

TABLE 1. RESULTS FOR SOIL ANALYSES AT RICO

Sample station	Source[a]	Type[b]	Arsenic (mg/kg)	Cadmium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Manganese (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
TOWNSITE SOILS (0 – 2 in.)									
RSS02	PTI	RS	51	0.6 U	40	112	1,360	1	174 J
RSS03	PTI	RS	23	0.9	28	105	923	1	169 J
RSS04	PTI	RS	34	25.4	159	138	3,220	3	1,880 J
RSS05	PTI	RS	37	9.0	224	1,080	1,830	9	1,430 J
RSS06	PTI	RS	17	4.8	58	240	634	2	717 J
RSS07	PTI	RS	28	27.9	152	2,230	1,840	14	3,060 J
RSS08	PTI	RS	56	16.7	724	3,460	2,690	47	2,120 J
RSS10	PTI	RS	36	1.5	66	143 J	1,030	1	200 J
RSS14	PTI	RS	25	1.9	51	115 J	777	1	285 J
RSS17	PTI	RS	28	10.0	102	1,150 J	1,230	7	1,410 J
RSS18	PTI	RS	32	8.5	73	364 J	6,240	3	1,180 J
RSS20	PTI	RS	27	12.8	103	791 J	1,460	7	1,990 J
RSS21	PTI	RS	31	23.7	221	1,760	1,650	12	2,860
RSS22	PTI	RS	39	1.9	88	380	1,970	1	369
RSS23	PTI	RS	25	8.5	114	851	1,000	5	1,240
RSS24	PTI	RS	29	22.0	234	2,100	2,710	12	3,560
RSS25	PTI	RS	28	6.7	118	1,000	1,980	10	1,285
RSS26	PTI	RS	19	10.3	96	675	564	3	2,430
RSS27	PTI	RS	28	9.5	154	677	1,780	6	1,370
RSS28	PTI	RS	19	6.8	70	402	1,130	2	1,240 J
RSS29	PTI	RS	35	49.0	221	2,430	2,390	11	6,100 J
RSS30	PTI	RS	29	34.3	263	3,920	3,450	16	4,820 J
RSS31	PTI	RS	18	5.5	154	893	1,260	3	932 J
RSS33	PTI	RS	25	6.2	87	368	1,210	2	1,100 J
RSS36	PTI	RS	28	5.0	99	825	1,530	10	916 J
RSS37	PTI	RS	20	9.1	117	908	1,660	7	1,340 J
RSS38	PTI	RS	27	8.9	131	4,920	1,000	10	1,580 J
RS-02	Walsh	RS	62	7.0	190	1,500	1,100	11	990
RS-04	Walsh	RS	26	10.0	170	160	1,500	10	1,500
RS-12	Walsh	RS	37	19.0	330	5,200	1,300	13	2,400
RS-15	Walsh	RS	21	57.0	500	3,900	3,000	16	7,700
RS-16	Walsh	RS	20 U	6.0	84	750	1,800	10 U	1,300
RS-18	Walsh	RS	20 U	13.0	110	1,400	2,400	10 U	2,400
RS-21	Walsh	RS	20 U	38.0	240	3,400	2,900	18	5,300
RS-22	Walsh	RS	20 U	33.0	200	2,000	1,500	10 U	4,400
RS-23	Walsh	RS	29	11.0	160	800	2,500	10 U	2,000
RS-28	Walsh	RS	20 U	17.0	420	3,500	2,000	14	2,600
Lots 17-20	Walsh	RS	10 U	9.5	NA	830	NA	NA	2,000
School Lots	Walsh	RS	10 U	6.6	NA	650	NA	NA	1,500

TABLE 1. (cont.)

Sample station	Source[a]	Type[b]	Arsenic (mg/kg)	Cadmium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Manganese (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
RIVER CORRIDOR SOILS (0 – 2 in.)									
RSS01	PTI	RC	35	1.8	76	346	944	3	249 J
RSS11	PTI	RC	56	1.2	94	124	1,900	2	226 J
RSS15	PTI	RC	32	5.7	84	424 J	2,560	26	927 J
RSS16	PTI	RC	25	6.7	93	471 J	894	3	860 J
RSS19	PTI	RC	98	9.2	641	6,180 J	529	34	1,520 J
RS-19	Walsh	RC	28	23.0	260	12,000	800	21	3,700
RS-20	Walsh	RC	22	17.0	330	2,000	1,800	10 U	2,400
RS-24	Walsh	RC	30	11.0	190	1,000	1,900	10 U	1,700
RS-25	Walsh	RC	40	4.0	200	1,200	1,200	12	1,100
RS-26	Walsh	RC	27	9.0	310	1,600	13,000	41	4,000
RS-27	Walsh	RC	25	14.0	150	500	12,000	48	1,500
TOWNSITE ONLY									
		Sample size	39	39	37	39	37	37	39
		Minimum	10 U	0.6 U	28	105	564	1	169
		Maximum	62	57.0	724	5,200	6,240	47	7,700
		Arithmetic mean	26	14.2	172	1,439	1,852	8	2,047
		UCLM[c]	33	25.2	217	2,541	2,167	13	3,103
RIVER CORRIDOR ONLY									
		Sample size	11	11	11	11	11	11	11
		Minimum	22	1.2	76	124	529	2	226
		Maximum	98	23.0	641	12,000	13,000	48	4,000
		Arithmetic mean	38	9.3	221	2,350	3,412	18	1,653
		UCLM[c]	50	23.0 [d]	378	11,306	8,996	48 [d]	4,000 [d]
TOWNSITE AND RIVER CORRIDOR									
		Sample size	50	50	48	50	48	48	50
		Minimum	10 U	0.6 U	28	105	529	1	169
		Maximum	98	57.0	724	12,000	13,000	48	7,700
		Arithmetic mean	29	13.1	183	1,639	2,209	11	1,961
		UCLM[c]	35	21.0	223	2,624	2,525	16	2,835

TABLE 1. (cont.)

Sample station	Source[a]	Type[b]	Arsenic (mg/kg)	Cadmium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Manganese (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
BACKGROUND SOILS (0 – 2 in.)									
BK01	PTI	BK	16	1.0 (U)	23	206	604	2 U	252 J
BK02	PTI	BK	18	3.1	97	412	552	2	515 J
BK03	PTI	BK	25	4.3	33	82	818	1	506 J
BK04	PTI	BK	24	1.7	25	177	914	2	281 J
BK05	PTI	BK	8	10.9	68	617	1,100	3	1,000 J
BK06	PTI	BK	18	0.7	38	151	923	2	277 J
BK07	PTI	BK	19	1.3	53	66	1,020	1	161 J
BK08	PTI	BK	24	0.7 U	39	57	872	1 U	98 J
BK09	PTI	BK	20	3.3	42	141	2,120	1	683 J
BK10	PTI	BK	43	1.1	24	108 J	3,430	1	398 J
BK11	PTI	BK	38	0.7 U	45	64 J	1,500	1 U	167 J
BK12	PTI	BK	23	6.3	184	441 J	1,250	1	685 J
BK13	PTI	BK	22	4.2	26	228 J	1,180	1	555 J
BK14	PTI	BK	37	6.7	210	1,310 J	1,270	4	1,130 J
BK15	PTI	BK	25	3.8	37	155	11,300	2	1,360 J
RSS09	PTI	BK	28	4.1	40	184 J	1,130	1 U	647 J
RSS12	PTI	BK	27	1.0	125	124 J	710	1 U	175 J
RSS13	PTI	BK	21	0.8	49	78 J	1,090	1 U	171 J
RSS34	PTI	BK	16	6.9	103	306	851	2	919 J
RSS35	PTI	BK	16	2.6	46	146	1,020	1 U	360 J
BK 10	Walsh	BK	10 U	1.6	NA	190	NA	NA	360
BK 11	Walsh	BK	10 U	1.0 U	NA	62	NA	NA	150
BK 38	Walsh	BK	10 U	1.0 U	NA	84	NA	NA	160
BK 39	Walsh	BK	14	1.0 U	NA	96	NA	NA	160
Group Tract	Walsh	BK	13	2.1	NA	260	NA	NA	500
RS-01	Walsh	BK	20 U	2.0 U	27	100	1,100	10 U	190
RS-05	Walsh	BK	20 U	6.0	33	280	1,400	10 U	880
RS-17	Walsh	BK	20 U	7.0	66	540	740	10 U	750
		Sample size	28	28	23	28	23	23	28
		Minimum	8	0.7 U	23	57	552	1 U	98
		Maximum	43	10.9	210	1,310	11,300	10	1,360
		Arithmetic mean	19	3.0	62	238	1,604	2	482
		UCLM[c]	25	5.3	81	320	1,905	3	671

[a] PTI samples were taken in May-June, 1995; Walsh samples were taken in June-Sept., 1994

[b] RS = Residential soils; RC = River corridor soils; BK = Background soils

[c] Upper 95% Confidence Limit of the mean, calculated based on a lognormal distribution

[d] When the UCLM is greater than the maximum observed result, then the maximum result is used as the UCLM (EPA, 1992; "Supplemental Guidance to RAGS: Calculating the concentration term)

Note: Calculations for mean and UCLM were done using half the detection limit for non-detects

U = Not detected; value represents detection limit

(U) = Value is a result of averaging two duplicates, one of which was not detected

J = Qualified as estimated during data validation

NA = Not analyzed by Walsh

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of manganese was 1852 mg/kg (UCLM = 2167 mg/kg), compared to a background mean of 1604 mg/kg (UCLM = 1905 mg/kg).

- Silver was detected in all but six townsite soil samples analyzed by PTI. Reported concentrations ranged from 1 to 47 mg/kg. Background silver concentrations ranged from undetected (detection limit of 1-10 mg/kg) to 4 mg/kg. The summary statistics in Table 1 use the 10-mg/kg detection limit as the high end of the reported concentration range. The arithmetic mean silver concentration in residential soils was 8 mg/kg (UCLM = 48 mg/kg [see Table 1, footnote d]). The mean background silver concentration was 2 mg/kg (UCLM = 3 mg/kg).

- Zinc was detected in all residential soil samples analyzed. Reported zinc concentrations ranged from 169 to 7700 mg/kg. Zinc concentrations in background soils ranged from 98 to 1360 mg/kg. The mean residential soil zinc concentration was 2047 mg/kg (UCLM = 3103 mg/kg), compared to a mean background concentration of 482 mg/kg (UCLM = 671 mg/kg).

Analytical results from the subsurface samples collected by ESA/PTI are included in Table 2. In general, changes in depth had minimal impact on metals concentrations in soil. Arsenic values remained relatively constant, with only minimal variations of 4 or 5 mg/kg between each depth. For most locations, cadmium values decreased slightly with depth. Lead values generally decreased with depth; concentrations in the 10- to 18-inch interval were a half to a fifth of the concentrations in the surface samples. Lead concentrations in RSS25 increased with depth, from 1,000 mg/kg at the surface to 6,070 mg/kg in the 10- to 18-inch interval, although no change was noted in soil horizon composition. Manganese concentrations remained relatively constant with depth.

TABLE 2. COMPARISON OF DEEP AND SHALLOW SOIL RESULTS AT RICO

Sample station	Depth (in)	Arsenic (mg/kg)	Cadmium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Manganese (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
RSS20	0-2	27	12.8	103	791 J	1,460	7	1,990 J
RNS20	2-10	26	7.6	84	353 J	948	3	1,570 J
RNS20	10-18	34	5.0	29	244 J	1,090	1 U	1,140 J
RSS21	0-2	31	23.7	221	1,760	1,650	12	2,860
RNS21	2-10	43	33.7	259	2,900	2,010	23	3,460
RNS21	10-18	33	29.3	140	1,610	1,470	18	2,130
RSS22	0-2	39	1.9	88	380	1,970	1	369
RNS22	2-10	53	0.6 U	71	56	1,810	1 U	140
RNS22	10-18	44	0.6 U	105	68	1,570	1 U	148
RSS23	0-2	25	8.5	114	851	1,000	5	1,240
RNS23	2-10	24	7.9	89	617	977	2	1,030
RNS23	10-18	22	5.8	51	402	950	1	741
RSS24	0-2	29	22.0	234	2,100	2,710	12	3,560
RNS24	2-10	31	16.5	145	1,060	2,190	7	2,380
RNS24	10-18	29	11	137	928	1,320	4	2,040
RSS25	0-2	28	6.7	118	1,000	1,980	10	1,285
RNS25	2-10	29	8.6	132	1,970	1,660	5	1,610
RNS25	10-18	18	6.5	90	6,070	1,480	8	1,030
RSS26	0-2	19	10.3	96	675	564	3	2,430
RNS26	2-10	12	12.7	80	540	291	2	3,470
RNS26	10-18	17	7.3	61	208	254	1 U	3,100
RSS27	0-2	28	9.5	154	677	1,780	6	1,370
RNS27	2-10	28	6.6	156	594	2,280	7	1,540 J
RNS27	10-18	21	3.6	179	287	1,230	2	579 J
RSS28	0-2	19	6.8	70	402	1,130	2	1,240 J
RNS28	2-10	19	7.3	76	400	1,120	3	1,200 J
RNS28	10-18	18	7.3	66	406	1,110	4	1,250 J
RSS37	0-2	20	9.1	117	908	1,660	7	1,340 J
RNS37	2-10	24	8.6	122	859	1,480	6	1,280 J
RNS37	10-18	18	7.3	116	1,240	1,680	8	1,140 J

U = Not detected; value represents detection limit
J = Qualified as estimated during data validation

4. QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC) ANALYSIS

4.1 WALSH DATA

The report entitled *Phase I and Phase II Environmental Site Assessment, Rico, Colorado* (Walsh 1995) provides data for soil samples collected in 1994. The report includes a brief description of procedures for the collection, handling, and shipping of the samples, but no discussion of field quality control samples. The report included photocopies of laboratory data sheets for field samples and for quality control samples, including matrix spike samples, matrix spike duplicate samples, laboratory duplicate samples, and method blanks. Results for surrogate recoveries were also reported. The samples were analyzed by InterMountain Laboratories, Inc. (Bozeman, Montana).

Analyses of the soil data were completed according to methods described in U.S. EPA (1986). Soil results were reported on a wet weight basis for the following samples: Smuggler, Yankee Bay, Hillside#2, Hillside, Home, Sam Patch, Patrick, Ada North, Group Tract, Trench 1, Trench 2, BK 10, BK 11, BK 38, BK 39, Lots 17-20, and School Lots. Because no percent moisture was reported for these samples, no correction to dry weight could be made. These samples were analyzed for arsenic, cadmium, lead, and zinc. All other results were reported on a dry-weight basis, in accordance with standard EPA procedures.

PTI reviewed the results of the Walsh QA/QC samples and concluded that the laboratory had maintained good to excellent analytical accuracy and precision based on a preliminary review of the laboratory quality assurance sample results.

4.2 PTI DATA

A quality assurance review of laboratory data generated by the PTI study was completed for arsenic, cadmium, copper, lead, manganese, silver, and zinc in 73 soil samples and 2 reference material samples. A total of 546 analytical results for metals were reported by the laboratory. Of these results, 528 were reported at a concentration above the method detection limit, and 18 were reported as undetected (the method detection limit was reported by the laboratory with a *U* qualifier). During the quality assurance review, 20 lead and 58 zinc results were qualified as estimated (*J*), and no results were restated as undetected or rejected. All qualifiers resulting from the data quality reviews are noted in Table 1 and discussed in the following sections. Handwritten—and initialed—changes were added to some of the data sheets during the data validation process and reflect changes to the data summary sheets that are based on the raw data.

4.2.1 QA/QC EVALUATION

The soil decontamination blank, bottle blank, and reference material samples were analyzed for metals and conventional analytes. The data packages for these samples contained all documentation and data necessary to conduct the quality assurance review.

4.2.2 Data Quality Assessment

The methods used to analyze the soils collected by PTI are detailed above (Section 2.2.1). The results for quality control procedures employed for the analysis of field samples are discussed below, including holding times, methodology, instrument performance, and analytical accuracy (bias and precision). Data quality was assessed in terms of method- and laboratory-specific control limits, and data quality objectives (DQOs) established for this project (PTI 1995).

4.2.2.1 Completeness

The results reported by the laboratory for metals in the natural field and reference material samples were 100 percent complete and met the project DQOs. No data were rejected during the quality assurance review.

4.2.2.2 Holding Times

All analytical holding time constraints and sample preservation requirements (PTI 1995) were met for all samples.

4.2.2.3 Instrument Performance

The results for the initial and continuing calibrations associated with the natural field and reference material sample analyses are described below. No changes in instrument performance that would have resulted in the degradation of data quality were indicated during any analysis sequence.

4.2.2.4 Mass Spectrometer Tuning and Stability

The mass spectrometer tuning and stability checks made by the laboratory prior to sample analyses conducted using EPA Method 200.8M were acceptable.

4.2.2.4.1 Initial Calibration—The initial calibrations completed for all analytes met the criteria for acceptable performance and frequency of analysis.

4.2.2.4.2 Initial and Continuing Calibration Verification—The initial and continuing calibration verifications met the criteria for acceptable performance and frequency of analysis.

4.2.2.4.3 Contract-Required Detection Limit Standards—Contract-required detection limit standards met the criteria for acceptable performance and frequency of analysis.

4.2.2.4.4 Initial and Continuing Calibration Blanks—The initial and continuing calibration blanks met the criteria for acceptable performance and frequency of analysis.

4.2.2.5 Method Blank Analyses

No metals or conventional analytes were detected in the method blanks.

4.2.2.6 Instrument-Specific Quality Control Procedures

Instrument-specific quality control procedures for analyses by ICP include interference check samples and serial dilution of field samples. For analyses by GFAA, quality control procedures include analysis of (post-digestion) spikes and may also include analysis by the method of standard additions. Results for these procedures are evaluated below.

4.2.2.6.1 Serial Dilution of Samples for ICP Analyses—Serial dilution results for the sample analyses met the criteria for acceptable performance and frequency of analysis, with the exception of lead in 20 soil samples and zinc in 58 soil samples. Results for these metals in the affected samples may exhibit a negative bias, and were qualified as estimated (*J*) during the quality assurance review.

4.2.2.6.2 Quality Control Procedures for GFAA—GFAA quality control procedures were completed as required (U.S. EPA 1991a) and met appropriate control limits in all cases.

4.2.2.7 Accuracy

The accuracy of the analytical results is evaluated in the following sections in terms of analytical bias (laboratory control sample [LCS] and matrix spike recoveries) and precision (laboratory duplicates). Results for reference material analyses are discussed under *Field Quality Control*.

4.2.2.7.1 Laboratory Control Sample Recoveries—The recoveries for all LCSs (blank spikes) and the frequency of analysis met the criteria for acceptable performance.

Laboratory QA/QC data sheets are provided in Appendix E, Sections E-1 through E-3. A summary of all metal LCS recoveries is presented in Section E-1.

4.2.2.7.2 Matrix Spike Recoveries—The recoveries for matrix spike samples and the frequency of analysis met the criteria for acceptable performance. A summary of all metal matrix spike recoveries is presented in Appendix E, Section E-2.

4.2.2.7.3 Precision—The results for all duplicate sample analyses and the frequency of analysis met the criteria for acceptable performance. A summary of all metal duplicate results is presented in Appendix E, Section E-3.

4.2.2.8 Analyte Quantification and Method Detection Limits

As part of the Level II validation, the calculations for analyte quantification were checked for one result in each sample. The quantification checks made during the quality assurance review identified an error in one soil sample. The laboratory was contacted and corrected results were reported. To confirm that additional transcription errors were not made, Sample SO0031 was reanalyzed. All results reported for the reanalysis agreed with the original sample results; therefore, no further action was taken. Method detection limits were acceptable for all target analytes and met project DQOs.

4.2.3 Field Quality Control

The results for all field quality control samples associated with the samples were acceptable. The field quality control samples included two standard reference material samples and three sets of field duplicates (soil samples).

4.2.3.1 Reference Material Recoveries

Two soil reference material samples (NIST #2711) were submitted to the laboratories as field samples. Recoveries of the reference materials (Table 3) met the project-specific data quality objective of 65–135 percent recovery. Some of the reported results were below the control limits provided by NIST, but within the project-specific DQOs. Because the matrix spike and LCS recoveries were acceptable, and the reference material results met the project DQOs, no data were qualified because of the reference material results.

4.2.3.2 Field Duplicates

The precision for field duplicate analyses was acceptable. Field duplicate results are presented in Table 4.

TABLE 3. REFERENCE MATERIAL RESULTS – SOIL

Analyte	Reference Value[a] (mg/kg)	Sample Number SO0032 Original Reported Value (mg/kg)	Sample Number SO0032 Percent Recovery[b]	Sample Number SO0048 Original Reported Value (mg/kg)	Sample Number SO0048 Percent Recovery[b]
Arsenic	105	104	99	106	101
Cadmium	41.7	34.8	83	35.1	84
Copper	114	102	89	96	84
Lead	1,162	988	85	946 J	81
Manganese	638	465	73	439	69
Silver	4.63	4.00	86	4.00	86
Zinc	350	268 J	76	254 J	72

J = Qualified as estimated due to unacceptable performance on serial dilution results for ICP analysis (Section 4.2.2.6.1)

[a] National Institute of Standards & Technology, Gaithersburg, MD; Standard Reference Material 2711, Montana Soil

[b] Percent Recovery = (Reported Value/Reference Value) x 100

Note: Project-specific recoveries of 65–135% indicate acceptable data quality.

TABLE 4. FIELD DUPLICATE RESULTS - SOIL

	Sample Concentration			Sample Concentration			Sample Concentration		
Analyte	Sample SO0001	Duplicate SO0031	RPD	Sample SO0033	Duplicate SO0034	RPD	Sample SO0053	Duplicate SO0056	RPD
Arsenic	40	30	28.6	20	14	35	26	29	10.9
Cadmium	1.8	1.7	5.7	1.2	0.8 U	NC	606	9	2.9
Copper	71	80	11.9	24	22	8.7	124	132	11.1
Lead	351	340	3.2	213	198	7.3	1040	1970	8.0
Manganese	924	964	4.2	604	604	0	1990	1660	1.0
Silver	3	3	0	2 U	2 U	NC	9	5	10.5
Zinc	258	239	7.6	243	261	7.1	1230	1610	1.0

U = Not detected; value represents detection limit

NC = Not calculated if sample and/or duplicate is undetected

RPD = Relative percent difference = ABS{(sample result - duplicate result)/mean} X 100

Note: Concentrations reported in mg/kg

5. REFERENCES

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Appendix A

Metals Concentrations and Surficial Geology Maps

SURFACE GEOLOGY MAP UNITS FOR RICO, COLORADO

The surface geology map of Rico, Colorado, was prepared as a part of the study conducted in May 1995 to characterize soils in the Town of Rico and surrounding areas. The area was mapped by walking traverses and observing geomorphology to determine the locations of boundaries between map units. Units were selected to determine the general surface soil composition in the area (i.e., colluvium, alluvium, fan, disturbed colluvium, disturbed alluvium, and disturbed fan materials).

Lines defining units are solid, dashed, or dotted, depending on the degree of accuracy or clarity of their boundaries. Solid lines indicate accuracy within 5 ft of either side of the line, and units should be considered to have a sharp boundary between them. Dashed lines represent less accuracy or clarity and are considered to be accurate within 10 ft. Dotted lines are the least accurate, ±15 ft, and represent units that gradually blend into one another instead of having a sharp boundary. Combined units are indicated by overlapping patterns (i.e., carbonate waste rock and disturbed colluvium downhill of the Van Winkle mine) or a separate color (i.e., disturbed colluvium/fill) where all units present are mixed throughout the area.

MAP UNIT DESCRIPTIONS

Alluvium (Al)—Sand, gravel, and boulders transported by a fluvial process along the Dolores River and Silver Creek. Alluvium also represents wetlands where underlying material may be masked due to heavy vegetation.

Colluvium (Co)—Soils and rubble derived from the weathering of subjacent bedrock. Formations present in float or outcrop are Precambrian greenstone and metadiorite, Uncompahgre Quartzite, Leadville limestone, Larsen Quartzite, Hermosa Formation, hornblende latite porphyry, and monzonite.

Fan Alluvium (F)—Alluvial fan deposits (gravelly, sandy loam) deposited from ancestral Silver Creek.

Disturbed Alluvium (DAl)—Alluvium that has been altered in some manner to accommodate construction of buildings, roads, railroad grades, or levies.

Disturbed Colluvium (DCo)—Colluvium that has been altered in some manner to accommodate construction of buildings, roads, or quarries. Many residential soils appear to be graded, and yards have been groomed to remove rocks to facilitate construction or vegetation.

Disturbed Colluvium\Fill (DCo\FL)—Combination of disturbed colluvium and fill units. (See descriptions of each).

Disturbed Fan Alluvium (DF)—Fan alluvium that has been altered in some manner to accommodate construction of buildings and roads. Many residential soils appear to be graded, and yards have been groomed to remove rocks to facilitate construction or vegetation.

Disturbed Fan Alluvium\Fill (DF\FL)—Combination of disturbed fan alluvium and fill units. (See descriptions of each).

Disturbed Fan Alluvium\Tailings (DF\T)—Combination of disturbed fan alluvium and tailings units. (See descriptions of each).

Waste Rock Carbonate (WRC)—Mine waste rock from carbonate-hosted ore deposits that originate in either the Ouray limestone, Leadville limestone, or the limestone deposits within the Hermosa Formation. Notable examples of this unit within the study area include the waste rock associated with the Atlantic Cable mine, the Van Winkle mine, and the Shamrock mine. Areas that contain only WRC pattern indicate regions within this unit that appear to be major disposal areas of the material.

Waste Rock Non-Carbonate (WRNC)—Mine waste rock from non-carbonate-hosted deposits that originate in the sandstones, arkoses, and siltstones of the Hermosa Formation, the siltstone and arkoses of the Rico and Cutler Formations, and the hornblende latite porphyry. Notable examples of this unit within the study area include the waste rock associated with the Santa Cruz mine and the Silver Swan mine. Areas that contain only WRNC pattern indicate regions within this unit that appear to be major disposal areas of the material.

Tailings (T)—Fine to sand-size material produced by the milling of sulfidic ores, commonly pyrite-rich. The principal examples of this unit within the study area include materials associated with the Columbia and Pro Patria tailings. Crosses indicate regions within this unit that appear to be major disposal areas of the material.

Coal-cinder (CC)—Uncombusted fuel and/or combusted waste. The coal and cinders are concentrated in the valley proximate to the historic railroad line.

Slag (Sl)—Residual products associated with smelting of ore or ore material. In the study area, slag is located primarily adjacent to the Columbia tailings.

Debris (DE)—Construction debris, torn-down structures, or other debris. The debris usually consists of large appliances, old cars, and/or piles of old boards.

Pavement (PV)—Asphalt surface on top of fill or disturbed native material.

Fill (FL)—Imported material that is not waste rock, tailings, coal, cinders, slag, or debris. The fill is primarily gravel extracted from a downvalley quarry and consists of clasts of sandstone, siltstone, monzonite, porphyry, greenstone, and quartzite. This material is often associated with the top layer of roads and driveways and was used as a base for Highway 145.

BK05 8 ppm
BK14 37 ppm
RS17w 10 ppm
RS05w 10 ppm
BK13 22 ppm
RS831 18 ppm
RS832 24 ppm
RS805 37 ppm
RS834 16 ppm
RS833 25 ppm
SILVER CREEK
RS806 17 ppm
BK03 25 ppm
BK02 18 ppm
BK01 16 ppm
RS830 29 ppm
RS823 25 ppm
RS824 29 ppm
RS839 27 ppm
RS804 34 ppm
BK15 25 ppm
RS828 19 ppm
GROUP w 13 ppm
RS808 56 ppm
RS807 28 ppm
RS829 35 ppm
RS836 28 ppm
RS802 51 ppm
RS803 23 ppm
RS821 31 ppm
RS15w 21 ppm
RS04w 26 ppm
RS01w 10 ppm
BK38w 5 ppm
BK06 18 ppm
RS822 28 ppm
RS825 28 ppm
School lots 5 ppm
BK10w 5 ppm
LOTS 17-20w 5 ppm
BK39w 4 ppm
BK11w 5 ppm
RS16w 10 ppm
RS820 22 ppm
RS18w 10 ppm
RS818 32 ppm
RS14 25 ppm
RS21w 10 ppm
RS837 20 ppm
RS02w 62 ppm
RS828 19 ppm
RS15 32 ppm
RS22w 10 ppm
RS24w 30 ppm
RS23w 29 ppm
RS817 28 ppm
RS12w 37 ppm
RS26w 40 ppm
RS819 98 ppm
RS13 21 ppm
RS16 25 ppm
RS26w 10 ppm
RS19w 28 ppm
RS20w 22 ppm
RS26w 27 ppm
RS27w 25 ppm
DOLORES RIVER
BK12 23 ppm
RS801 35 ppm
RS835 16 ppm
BK07 19 ppm
RS812 27 ppm
RS811 56 ppm
RS810 36 ppm
RS822 39 ppm
BK08 24 ppm
BK11 38 ppm
RS809 28 ppm
BK09 20 ppm
BK10 43 ppm

LEGEND

BK09 141 ppm — PTI sample location with arsenic concentration

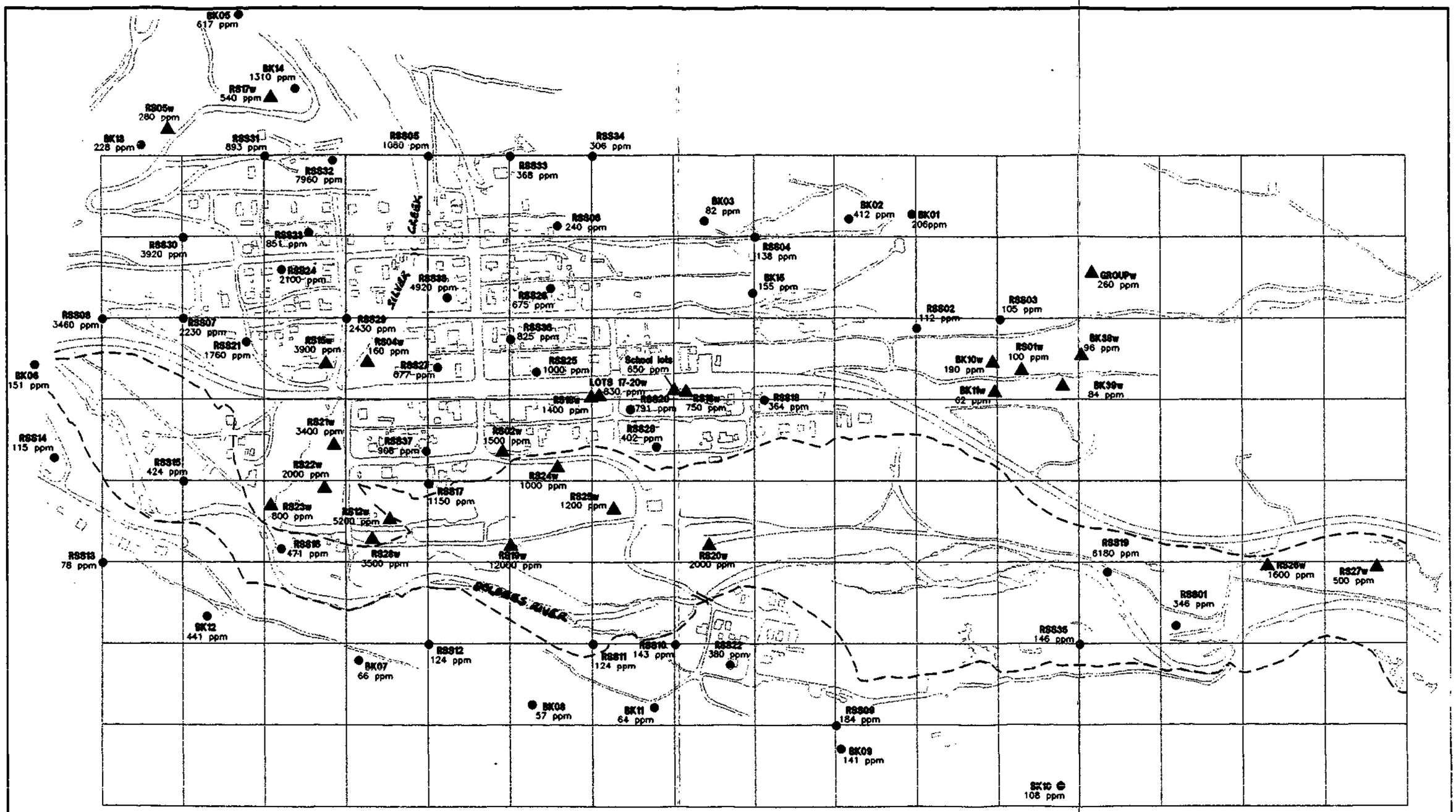
RS01w 100 ppm — Walsh sample location with arsenic concentration

– – – Dolores River Corridor

0 200 400 feet

Arsenic Concentrations in Soils at Rico, Colorado

RICO\AS-2.DWG 1 01/2/95



LEGEND

BK09 141 ppm — PTI sample location with lead concentration

RS01w 100 ppm — Walsh sample location with lead concentration

Dolores River Corridor

0 200 400 feet

Lead Concentrations in Soils at Rico, Colorado

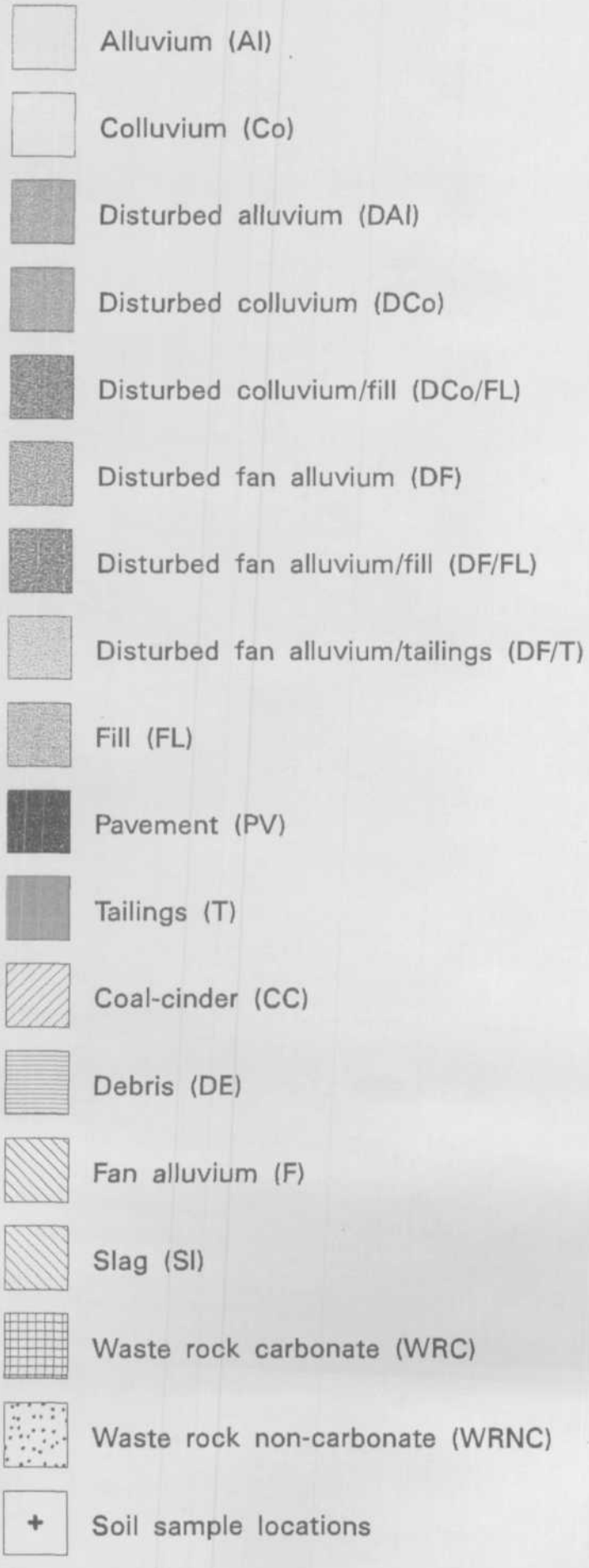
RICO\PB-2.DWG L 06/28/92

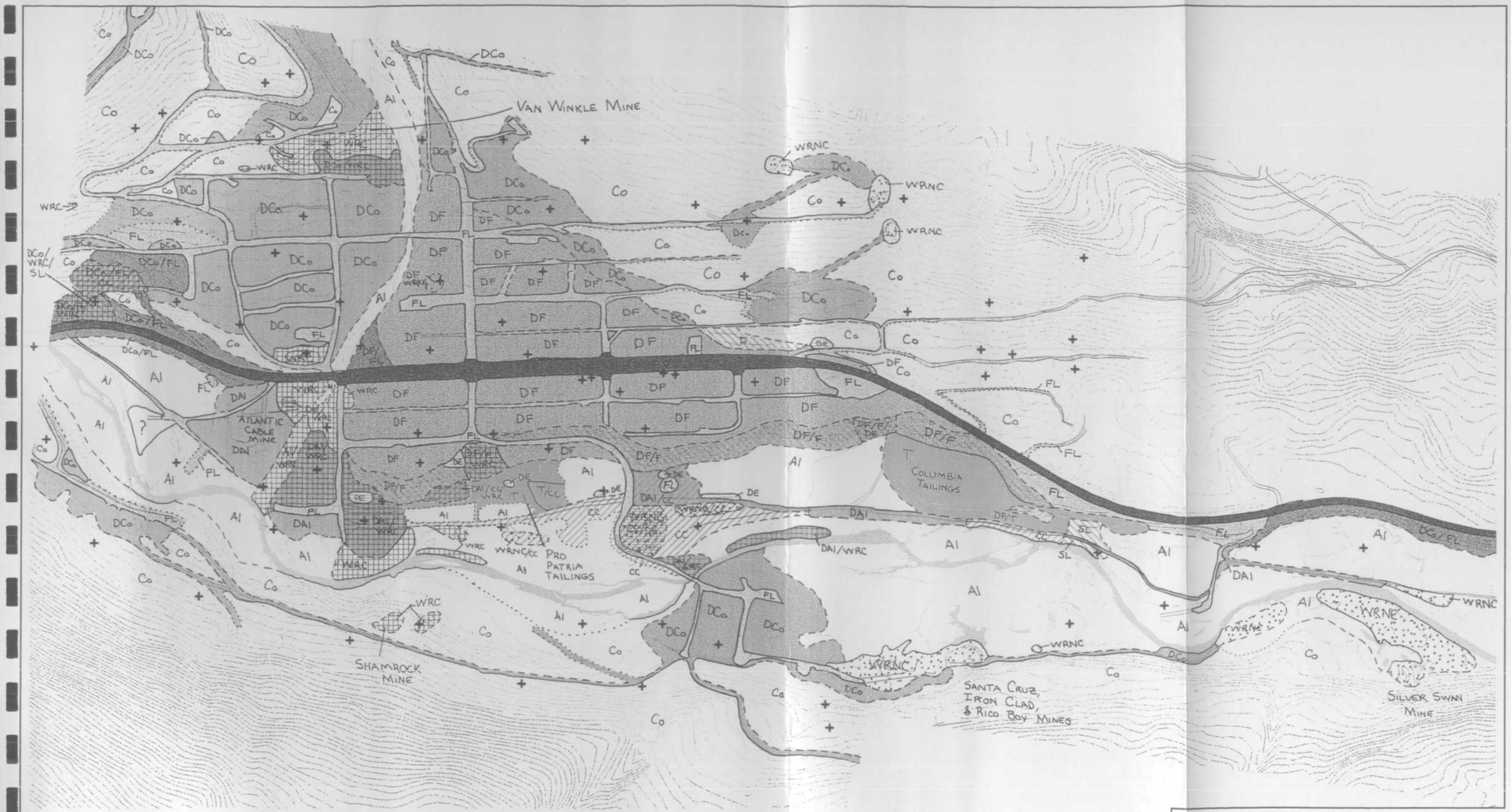
Color Chart(s)

The following pages contain color that does not appear in the scanned images.

To view the actual images, please contact the Superfund Records Center at (303) 312-6473.

LEGEND


Alluvium (Al)
Colluvium (Co)
Disturbed alluvium (DAl)
Disturbed colluvium (DCo)
Disturbed colluvium/fill (DCo/FL)
Disturbed fan alluvium (DF)
Disturbed fan alluvium/fill (DF/FL)
Disturbed fan alluvium/tailings (DF/T)
Fill (FL)
Pavement (PV)
Tailings (T)
Coal-cinder (CC)
Debris (DE)
Fan alluvium (F)
Slag (Sl)
Waste rock carbonate (WRC)
Waste rock non-carbonate (WRNC)
+
Soil sample locations



Note: See legend on following page.

Surficial geology map of Rico, Colorado.

CA47-02-01 07/31/95 GIS

Appendix B

Soil Sampling Locations

TABLE B-1. WALSH SOIL SAMPLE DESCRIPTIONS

RS-01:	RS-01 was collected in coniferous forest from the Group Tract, which is located on the south side of Rico. This sample was a three-point composite sample from 0 to 2 inches depth. The sample consists of native soil (map unit NS) derived from talus and slope wash material.
RS-02:	RS-02 was collected from Block 1, lots 39 and 40 located behind Rico Properties. The sample was collected from the upper 4 inches from a 20-inch deep observation hole. From 0 to 20 inches, there was fill material consisting of alluvium, angular rocks containing iron staining (possibly mine waste rock), brick and metal fragments, and some coal and glass fragments. The sample is from map unit F.
RS-03:	RS-03 was a three-point composite collected from Block 21, lot 1, which is located just east of the Atlantic Cable mine site. The sample was from 0 to 4 inches depth and consisted of fill material of alluvial cobbles and angular mineralized rocks (possibly mine waste rock). This sample is from map unit F/MW.
RS-04:	RS-04 was collected from Block 14, lots 36–40 south of Silver Creek, east of Glasgow Avenue. This sample was a four-point composite from roughly 0 to 7 inches depth. The sample consisted of fill material, rounded to angular cobbles and gravel, and brick and glass fragments (map unit F).
RS-05:	RS-05 was collected from the Atlantic Cable Subdivision in lots 41–44, which is located in northeast Rico. This sample was a three-point composite from 0 to 2 inches depth. The sample consisted of native soil (map unit NS) derived from various types of sedimentary rocks.
RS-06:	RS-06 was collected north of Rico along the western floodplain of the Dolores River west of the former acid plant. This sample was a three-point composite from 0 to 2 inches depth. The sample consisted of native soil derived from alluvium and stream gravel and may be located in jurisdictional wetlands (map unit WL).
RS-07:	RS-07 was collected uphill from the Spill mine (also known as Mountain Springs mine) in an area adjacent to mine workings. This sample was a three-point composite from 0 to 2 inches depth. The sample consisted of native soil (map unit NS) derived from sedimentary and igneous rocks.
RS-08:	RS-08 was collected downhill from the Spill mine in an area adjacent to mine workings. This sample was a three-point composite from 0 to 2 inches depth. The sample consisted of native soil (map unit NS) derived from sedimentary and igneous rocks.
RS-09:	RS-09 was a three-point composite collected in a drainage down-gradient from the Spill Mine. The drainage is stained red from iron precipitation from the mine site. The sample was from 0 to 2 inches depth and consisted of red-stained alluvial sediments generated by acid mine drainage (map unit AMD).
RS-10:	RS-10 was collected in a stand of dead trees on the steep hillside just east of the former acid plant. This sample was a four-point composite from 0 to 2 inches depth and consisted of native soil (map unit NS) derived from talus and slope wash.

RS-11:	RS-11 was a two-point composite collected from Block 4, lot 40 and Block 2, lot 11 near the Rico Hotel. The sample was from 0 to 2 inches depth and consisted of native soil (map unit NS) derived from talus and slope wash.
RS-12:	RS-12 was a four-point composite collected from Block 12, within lots 31 and 36 and Block 25, within lots 5 and 11. Blocks 12 and 25 are located on the west side of Rico in the floodplain of the Dolores River. The sample was from 0 to 2 inches depth and consisted of alluvium mixed with mine waste rock (map unit Al/MW).
RS-13:	RS-13 was a four-point composite collected from the Homestake claim on the north end of Rico. The sample was from 0 to 2 inches depth and consisted of native material, slag, mine waste rock, and coal (map unit S/MW).
RS-15:	RS-15 was a three-point composite from 0 to 6 inches depth from Block 21, lot 1. The sample consisted of fill material (map unit F) mixed with native soil. The fill material contained some mineralized mine waste.
RS-16:	RS-16 was collected from Block 2, lot 9-12. The sample was a three-point composite from 0 to 8 inches depth. The sample consisted of both fill material and possible some native soil (map unit F).
RS-17:	RS-17 was a three-point composite from 0 to 2 inches depth collected from the Warner K. Patrick Tract. The sample consisted of native soil (map unit NS).
RS-18:	RS-18 was collected from Block 1, lots 16-20. The sample was a three-point composite from 0 to 5 inches depth and consisted of fill material and native soil (map unit F). The fill material contained charcoal and glass and porcelain fragments.
RS-19:	RS-19 was a four-point composite from 0 to 2 inches depth. It was collected from wetlands (map unit WL) along the east side of the Dolores River and west of Block 28.
RS-20:	RS-20 was collected from wetlands along the east side of the Dolores River and west of Block 27. The sample was a four-point composite from 0 to 2 inches depth and consisted of native soil (map unit WL).
RS-21:	RS-21 was collected from Block 20, lots 21–27. The sample was a four-point composite from 0 to 2 inches depth and consisted of disturbed native soil (map unit DS).
RS-22:	RS-22 was collected from Block 19, lots 13–20. The sample consisted of native soil that has been disturbed by construction activities (map unit DS). The sample was a four-point composite from 0 to 2 inches depth.
RS-23:	RS-23 was collected from Block 19, lots 7–9 and 29–36. The sample consisted of alluvium disturbed from construction activities (map unit DA) and was a four-point composite from 0 to 2 inches depth.
RS-24:	RS-24 was collected from disturbed soil (map unit DS) from Block 28, lots 6–20. The sample was a four-point composite from 0 to 2 inches depth.
RS-25:	RS-25 was collected from the former train depot site. The sample consisted of clinkers and fill material mixed with alluvium (map unit C/F/A). The sample was a four-point composite from 0 to 2 inches.
RS-26:	RS-26 was collected in dump debris (map unit DD) along the Dolores River. The sample was a three-point composite from 0 to 6 inches depth.

RS-27:	RS-27 was collected from wetlands (map unit WL) along the east side of the A.E. Arms Tract. The sample consisted of a native soil and was a four-point composite from 0 to 2 inches depth.
RS-28:	RS-28 was collected from Block 25, lots 1-4. This sample consisted of disturbed alluvium and possibly some mine waste (map unit Al/MW). It was a four-point composite from 0 to 2 inches depth.
Smuggler:	This sample was collected from the Smuggler claim in northwest Rico. This sample was a four-point composite from 0 to 2 inches in depth. The sample contained native soil and road base materials.
Yankee Boy:	This sample was collected from the Yankee Boy claim in northwest Rico. This sample was a four-point composite from 0 to 2 inches. This sample contained native soil and sediment from a trench.
Hillside #2:	This sample was collected from the Hillside #2 claim in northwest Rico. This sample was a five-point composite from 0 to 2 inches. This sample contained native soil and road base material.
Hillside:	This sample was collected from the Hillside claim in northwest Rico. This sample was a four-point composite from 0 to 2 inches. This sample contained native soil and road base material.
Home:	This sample was collected from the Home claim in west Rico. This sample was a five-point composite from 0 to 2 inches. This sample contained native soil and road base material.
Sam Patch:	This sample was collected from the Sam Patch claim in west Rico. This sample was a four-point composite from 0 to 2 inches. The sample contained fill and mine waste from the east part of the claim.
Ada North:	This sample was collected from the Little Ada Tract North in south Rico. This sample was a four-point composite from 0 to 2 inches. The sample contained native soil.
Group:	This sample was collected from the Group tract in south Rico. This sample was a six-point composite from 0 to 2 inches. The sample contained native soil, including soil from the area downgradient of the apex claim mine waste pile.
BK10:	This sample was collected from Block 10 in south Rico. This sample was a three-point composite from 0 to 2 inches. The sample contained native soil.
BK11:	This sample was collected from Block 11 in south Rico. This sample was a three-point composite from 0-2 inches. The sample contained native soil.
BK38:	This sample was collected from Block 38 in south Rico. This sample was a three-point composite from 0-2 inches. The sample contained native soil.
BK39:	This sample was collected from Block 39 in south Rico. This sample was a six-point composite from 0-2 inches. The sample contained native soil.
Lots 17-20:	This sample was collected from Lots 17-20, Block 1 in Rico. This sample was a six-point composite from 0-2 inches. The sample contained fill material.
School lots:	This sample was collected from Lots 9-12, Block 2 in Rico. This sample was a five-point composite from 0-2 inches. The sample contained fill material.

Patrick:	This sample was collected from the Warner K. Patrick Tract in northeast Rico. This sample was a three-point composite from 0–2 inches. This sample contained native soil which had some orange staining evident.
RP-01:	RP-01 was collected from a mine-waste spoil pile at the Laura Mine site, which is located about 1/2 mile east of Rico. This sample was a three-point composite from 0 to 2 inches depth. The sample contained mineralized (sulfides) waste material (map unit MW).
RP-02:	RP-02 was collected from a mine spoil at the Lexington Mine site, which is located on the southeast side of Rico. This sample was a three-point composite from 0 to 2 inches depth. The sample contained mineralized waste material (map unit MW).
RP-03:	RP-03 was a three-point composite from Block 20, lots 30 and 31 which is the former Atlantic Cable Mine site. This sample was from 0 to 3 inches and consisted of mineralized (pyrite and sphalerite) rock and soil (map unit MW).
RP-04:	RP-04 was collected from a small mine waste dump (map unit MW) on the Shamrock claim. The sample consisted of dump material and was a three-point composite from 0 to 6 inches depth.
RA-01:	RA-01 was a discrete grab sample collected along Silver Creek down gradient from the Argentine tailings impoundments. The sample was from 0 to 4 inches depth and consisted of alluvium and mine waste (map unit Al/MW).
T-01:	T-01 was collected from the former city landfill. The sample was a grab sample from 6 feet depth just above bedrock and consisted of reddish-brown sandy clay loam. Trash debris extended from 1.5 feet below the surface to bedrock.
T-02:	T-02 was collected from the former city landfill. The sample was a grab sample from 14 feet below the surface and about one foot below the trash debris. The sample consisted of reddish-brown sandy clay loam. Trash debris extended from 1.5 feet below the surface to 13 feet depth.
T-03:	T-03 was collected from Block 1, lots 36–38. The sample was a composite from 0 to 8 feet depth and consisted of fill material and possibly some mine waste material.
Trench 1:	This sample was collected from Lot 40, Block 1. The sample was a three-point composite from the east end of a trench excavated to a depth of 3 feet. The sample was of fill material.
Trench 2:	This sample was collected from Lot 40, Block 1. The sample was a three-point composite from the west end of a trench excavated to a depth of 3 feet. The sample was of native soil with small amounts of fill material.

TABLE B-2. SOIL SAMPLING LOCATIONS FOR MAY-JUNE 1995 SAMPLING EVENT

Sample ID*	Location
BK01	Franklin, M.S. 564; New Year, M.S. 1538; Golden Fleece, M.S. 2261
BK02	New Year, M.S. 1538
BK03	Rico Block 26, Lots 21-24
BK04	Humbolt, M.S. 15233 and James G. Blaine, M.S. 15233
BK05	Gem of Beauty, M.S. 1164
BK06	Homestake & Little Cora Consolidated Placer, M.S. 410
BK07	Smuggler, M.S. 5912 and Shamrock, M.S. 5832
BK08	Hillside, M.S. 7994 and Hillside No. 2, M.S. 7994
BK09	San Juan National Forest; West of Rico Block 34 and North of Iron Clad, M.S. 865
BK10	Hardscrabble, M.S. 8070 and Santa Cruz , M.S. 6132
BK11	Hillside, M.S. 7994 and Hillside No. 2, M.S. 7994
BK12	San Juan National Forest; West of Riverside, M.S. 590 and North of Smuggler, M.S. 5912
BK13	San Juan National Forest; North of Upper Atlantic Cable Subdivision, Tract 42
BK14	Warner K. Patrick Tract
BK15	Rico Block 9, Lots 35-40
RSS01	A.E. Arms Tract North
RSS02	Town of Rico, East of Block 10 and South of Block 9
RSS03	Group Tract
RSS04	Town of Rico, East of Rico Block 9 and South of Block 26
RSS05	Newman Millsite, M.S. 436A
RSS06	Rico Block 17, North half of Lot 33 and South half of Lot 34
RSS07	Elliot Mill Site, M.S. 1536-A
RSS08	Columbia Mill Site, M.S. 365-B
RSS09	San Juan National Forest; West of Rico Block 34 and North of Iron Clad, M.S. 865
RSS10	Rico Block 36, Lots 5-11
RSS11	Hillside, M.S. 7994
RSS12	Yanky Boy, M.S. 6969
RSS13	San Juan National Forest; West of Rico Block A and North of Star Route, M.S. 5970
RSS14	Rico Block B, Lots 11-20
RSS15	Tract "C", including R.G.S. R-O-W
RSS16	Tract "C"
RSS17	Rico Block 12, Lots 12-14
RSS18	Rico Block 3, Lots 1-11
RSS19	Rico Smelting Company Tract
RSS20, RNS2001, RNS2011	Rico Block 2, Lots 1-2
RSS21, RNS2101, RNS2111	Lot partly in Atlantic Cable Subdivision, East of Tract 2
RSS22, RNS2201, RNS2211	Rico Block 36, Lots 17-20
RSS23, RNS2301, RNS2311	Rico Block 23, Lots 16-17
RSS24, RNS2401, RNS2411	Rico Block 22, Lots 11-14
RSS25, RNS2501, RNS2511	Rico Block 6, North half of Lot 29 and Lots 30-32
RSS26, RNS2601, RNS2611	Rico Block 7, Lots 16-20
RSS27, RNS2701, RNS2711	Rico Block 14, Lots 21-28
RSS28, RNS2801, RNS2811	Rico Block 2, Lots 36-38
RSS29	Rico Block 15, Lots 39-40
RSS30	Atlantic Cable Subdivision, Tract 45, Phase III
RSS31	Atlantic Cable Subdivision, Tract 37
RSS32	Rico Block 24, Lots 21-30
RSS33	Rico Block 32, Lots 1-6
RSS34	Town of Rico, South of Rico Blocks 31& 32 and East of Block 26
RSS35	Max Boehmer Tract
RSS35	A.E. Arms Tract North
RSS36	Rico Block 6, Lots 4-5
RSS37, RNS3701, RNS3711	Rico Block 13, Lots 12-16
RSS38	Rico Block 15, Lots 23-26

* Sample IDs with multiple sample numbers indicate that samples were collected at depth at this location, in addition to a surface sample.

TABLE B-3. PHOTOLOG FROM SOIL SAMPLING EVENT

Photo #	Site	Date	Description	Orientation of photo
SS01	RSS01	5/23/95	Residential soil sampling site RSS01	North
SS02	RSS02	5/23/95	Residential soil sampling site RSS02	North
SS03	RSS03	5/23/95	Residential soil sampling site RSS03	North
SS04	RSS04	5/23/95	Residential soil sampling site RSS04	North
SS05	RSS05	5/23/95	Residential soil sampling site RSS05	North
SS06	RSS06	5/23/95	Residential soil sampling site RSS06	North
SS07	RSS07	5/23/95	Residential soil sampling site RSS07	North
SS08	RSS08	5/23/95	Residential soil sampling site RSS08	North
SS09	RSS09	5/24/95	Residential soil sampling site RSS09	East
SS10	RSS10	5/24/95	Residential soil sampling site RSS10	North
SS11	RSS10	5/24/95	Residential soil sampling site RSS10	North
SS12	RSS11	5/24/95	Residential soil sampling site RSS11	North
SS13	RSS12	5/24/95	Residential soil sampling site RSS12	Northeast
SS14	RSS13	5/24/95	Residential soil sampling site RSS13	East
SS15	RSS14	5/24/95	Residential soil sampling site RSS14	North
SS16	RSS15	5/24/95	Residential soil sampling site RSS15	North
SS17	RSS16	5/24/95	Residential soil sampling site RSS16	North
SS18	RSS17	5/24/95	Residential soil sampling site RSS17	North
SS19	RSS18	5/24/95	Residential soil sampling site RSS18	North
SS20	RSS19	5/24/95	Residential soil sampling site RSS19	North
SS21	RSS20	5/24/95	Residential soil sampling site RSS20	North
SS22	RSS21	5/25/95	Sampling pit dug for near surface samples RNS21	
SS23	RSS21	5/25/95	Residential soil sampling site RSS21, RNS21	North
SS24	RSS22	5/25/95	Residential soil sampling site RSS22, RNS22	North
SS25	RSS22	5/25/95	Sampling pit dug for near surface samples RNS22	
SS26	RSS23	5/25/95	Residential soil sampling site RSS23, RNS23	North
SS27	RSS24	5/25/95	Residential soil sampling site RSS24, RNS24	North
SS28	RSS24	5/25/95	Sampling pit dug for near surface samples RNS24	
SS29	RSS25	5/25/95	Residential soil sampling site RSS25, RNS25	North
SS30	RSS25	5/25/95	Sampling pit dug for near surface samples RNS25	
SS31	RSS26	5/25/95	Sampling pit dug for near surface samples RNS26	
SS32	RSS27	5/30/95	Residential soil sampling site RSS27, RNS27	North
SS49	BK01	5/23/95	Background soil sample site BK01	North
SS50	BK02	5/23/95	Background soil sample site BK02	West
SS51	BK03	5/23/95	Background soil sample site BK03	North
SS52	BK05	5/23/95	Background soil sample site BK05	West
SS53	BK06	5/23/95	Background soil sample site BK06	North
SS54	BK07	5/23/95	Background soil sample site BK07	North
SS55	BK08	5/23/95	Background soil sample site BK08	North
SS56	BK09	5/24/95	Background soil sample site BK09	North
SS57	BK10	5/24/95	Background soil sample site BK10	North
SS58	BK11	5/24/95	Background soil sample site BK11	North
SS59	BK12	5/24/95	Background soil sample site BK12	East
SS60	BK13	5/24/95	Background soil sample site BK13	North
SS61	BK14	5/24/95	Background soil sample site BK14	Southwest

Appendix C

Soil Sampling Field Data Forms

Soil Profile Description
Code Key

Color (Moist)

Munsell Color Chart
Sequence: Hue, Value/Chroma

Mottles

0 None	f	Fine (<5 mm)	f	Faint
1 Few	m	Medium (5-15 mm)	d	Distinct
2 Common	c	Coarse (>15 mm)	p	Prominent
3 Many				

Color from Munsell Color Chart

Texture

Feel Criteria - Description Attached

Size Classifications per Trilinear Diagram, Attached

Sands	Silt Loam	Silty Clay Loam
Loamy Sands	Silt Loam	Sandy Clay
Sandy Loam	Silt	Silty Clay
Fine Sandy Loam	Clay Loam	Clay
Very Fine Sandy Loam	Sandy Clay Loam	
Loam		

Structure

1 Weak (Unobservable Peds)
2 Moderate (Well formed Peds)
3 Strong (Distinct Peds in Undisturbed Soils)

vf	very fine	gr	granular
f	fine	pl	platy
m	medium	sbk	subangular blocky
c	coarse	abk	angular blocky
vc	very coarse	pr	prismatic
		cl	columnar
		m	massive
		sg	single grains

Soil Textural Classes in Terms of Field Experience and Feel

Sand:

Sand is loose and single-grained. The individual grains can readily be seen or felt. Squeezed in the hand when dry it will fall apart when the pressure is released. Squeezed when moist, it will form a cast, but will crumble when touched.

Sandy Loam:

A sandy loam is a soil containing much sand but which has enough silt and clay to make it somewhat coherent. The individual sand grains can readily be seen and felt. Squeezed when dry, it will form a cast which will readily fall apart, but if squeezed when moist a cast can be formed that will bear careful handling without breaking.

Loam:

A loam is a soil having a relatively even mixture of different grades of sand and of silt and clay. It is mellow with a somewhat gritty feel, yet fairly smooth and slightly plastic. Squeezed when dry, it will form a cast that will bear careful handling, while the cast formed by squeezing the moist soil can be handled quite freely without breaking.

Silt Loam:

A silt loam is a soil having a moderate amount of the fine grades of sand and only a small amount of clay, over half of the particles being of the size called "silt". When dry it may appear cloddy but the lumps can be readily broken, and when pulverized it feels soft and floury. When wet the soil readily runs together and puddles. Either dry or moist it will form casts that can be freely handled without breaking, but when moistened and squeezed between the thumb and finger it will not "ribbon" but will give a broken appearance.

Clay Loam:

A clay loam is a fine textured soil which usually breaks into clods or lumps that are hard when dry. When the moist soil is pinched between the thumb and finger it will form a thin "ribbon" which will break readily, barely sustaining its own weight. The moist soil is plastic and will form a cast that will bear much handling. When kneaded in the hand it does not crumble readily but tends to work into a heavy compact mass.

Clay:

A clay is a fine textured soil that usually forms very hard lumps or clods when dry and is quite plastic and usually sticky when wet. When the moist soil is pinched out between the thumb and fingers it will form a long, flexible "ribbon". Some fine clays very high in colloids are friable and lack plasticity in all conditions of moisture.

Consistency

Moist		Wet*	
lo	loose	so	not sticky
vfr	very friable	ss	slightly sticky
fr	friable	s	sticky
fi	firm	sv	very sticky
vfi	very firm	po	not plastic
efi	extremely firm	ps	slightly plastic
		p	plastic
		pv	very plastic

Reaction

eo	not effervescent
evsl	very slight effervescence
esl	slight effervescence
estr	strong effervescence
ev	violent effervescence

Boundary

a	abrupt
c	clear
g	gradual
d	diffuse
s	smooth
w	wavy
i	irregular
b	broken

Roots

0	None	vf	Very fine (< 1 mm)
1	Few	f	Fine (1-2 mm)
2	Common	m	Medium (2-5 mm)
3	Many	c	Coarse (> 5 mm)

Pores

0	None
1	Few (<1 per unit area)
2	Common (1-5 per unit area)
3	Many (>5 per unit area)

Size Criteria		Shape Criteria	
vf	Very fine (<0.5 mm)	v	vesicular (spherical or elliptical)
f	Fine (0.5-2 mm)	t	tubular
m	Medium (2-5 mm)	i	irregular
c	Coarse (>5 mm)		

Clay Films

n	Thin
mk	Moderately thick
k	Thick

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID: RSS01 Project Name: Rico

Location: South of Rico along Dolores R. Project Number: CA47-05-01

Sample Number: S0000115 Tag Number: 77826 / 77856

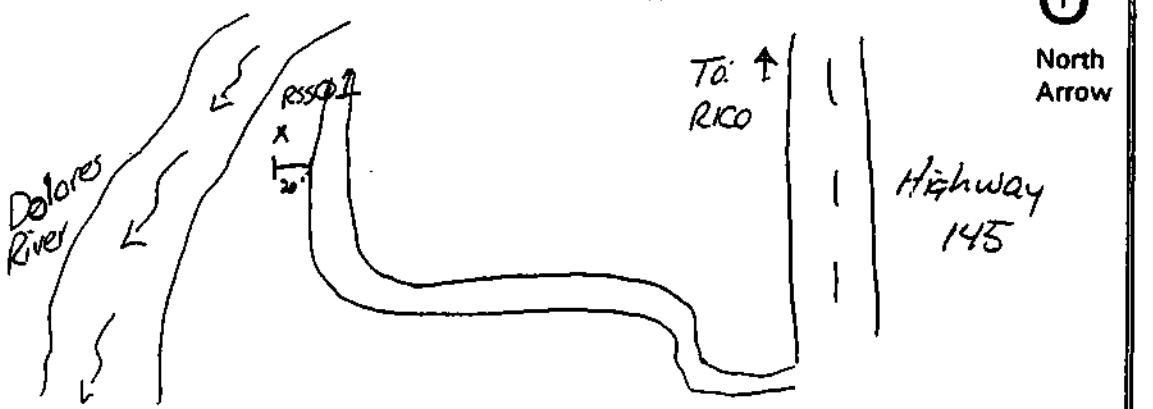
Date: 5/23/95 Time: 09:30 Photographic Roll: RICO 1 Number: 10

Weather Conditions: Sunny ~ 45°F

Ground Surface Conditions: Grass covered river terrace

Sampler Name: Jeff Paul

Location Sketch (show dimensions to mapped features)



Depth Status	Unified Symbol	Soil Description	Comments (color, odor, texture, mineralization, alteration)
		ON Back	

PTI SOIL PROFILE DESCRIPTION

Area/Location: _____ Approx. Elevation: _____ Contract No.: _____ Legal Description:

Vegetation: Grasses & evergreens Slope: 0-2% Date: 5/23/95 T____ R____ Sec.____

Parent Material: Alluvium Aspect: N, NE, E, SE, S, (SW), W, NW Moisture: dry to _____ moist to _____ sl. moist to 6" wet to _____ Station No.: RSS01

Physiography: River Terrace Relief: convex, concave, (planar) % Coarse Frag: 15%

Current Land Use: Recreational Drainage: excessive, somewhat excessive well, moderately well, somewhat poorly, poorly, very poorly Erosion Type: (sheet), rill, gully, wind Control Section Depth: 6"

Profile described by: BDP

Additional Comments: Small sulfide waste pile located 25 south of sampling area. Coarse frags. predominately greenish gray sandstones w/ some shale intermixed. No mineralization observed in coarse frags

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-6"	10yr 4/3	Sandy Loam	(1)2,3 vf,(f),m,c,vc gr,pl,(sbk),abk pr,cl,m,sg	lo,vfr (fr)fi vfi,efi	eo,evsl (esl)estr ev	a,c,g,d s,w,i,b	0,1(2)3 vf,f (m),c	5%	5%	5%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RSS02 Project Name RICO

Location SE of town by gas station Project Number CA47-05-01

Sample Number S00002 Tag Number

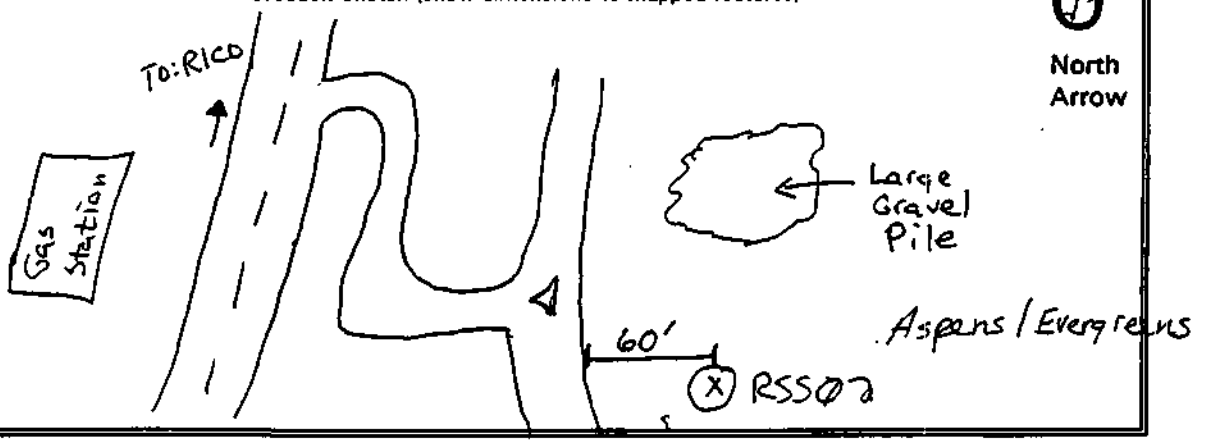
Date 5/23/95 Time 09:45 Photographic Roll RICO1 Number 11

Weather Conditions Sunny ~50°F

Ground Surface Conditions Grass, Aspens / Evergreens

Sampler Name Jeff Paul

Location Sketch (show dimensions to mapped features)



Depth | Status | Unified Symbol

			Soil Description	Comments (color, odor, texture, mineralization, alteration)
			ON BACK	

CA470501\SoilSamp.Frm

PTI SOIL PROFILE DESCRIPTION

Area/Location: SE of town by Gas Station Approx. Elevation: _____ Contract No.: CA47-05-01 Legal Description:

Vegetation: Grasses / Aspen Slope: 5% Date: 5/23/95 T____ R____ Sec.____

Parent Material: Colluvium Aspect: N, NE, E, SE, S, SW, (W), NW Moisture: dry to _____ moist to _____ sl. moist to 6" wet to _____ Station No.: RSSO 2

Physiography: Side slope Relief: (convex), concave, planar % Coarse Frag: 10%

Current Land Use: Residential Drainage: excessive, somewhat excessive (well), moderately well, somewhat poorly, poorly, very poorly Erosion Type: sheet, (rill), gully, wind Control Section Depth: 6"

Profile described by: BOYD

Additional Comments: Parent material - greenish gray sandstone & shales. No limestone visible. No visible mineralization. Fe pyrite present. Little oxidation visible.

Area has not been disturbed.

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-6"	10 yr 3/4	Sandy Loam	(1),2,3 vf,(f),m,c,vc (gr),pl,sbk,abk pr,cl,m,sg	lo,vfr (fr),fi vfi,efi	(eo),evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,(2),3 vf,f (m),c	10%	—	—
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RSS03 Project Name RICO

Location grid 7,7 Project Number CA47-05-01

Sample Number S000003 Tag Number 77828

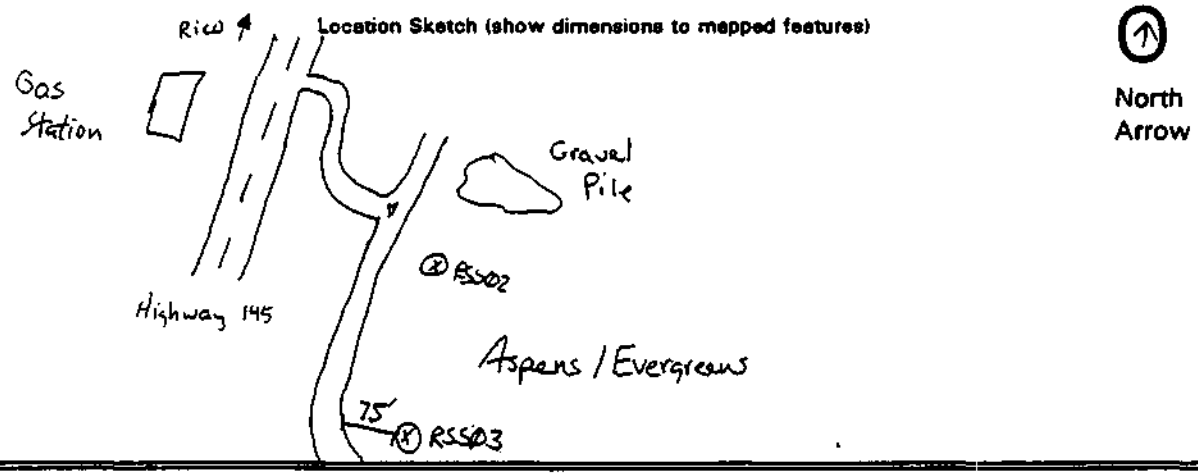
Date 5/23/95 Time 10:15 Photographic Roll RICO1 Number 12

Weather Conditions Partly cloudy, light breeze ~ 50°F

Ground Surface Conditions Grass / Kinickinick / Aspens / Evergreens

Sampler Name Jeff Paul

Location Sketch (show dimensions to mapped features)



Depth	Status	Unified Symbol	Soil Description	Comments (color, odor, texture, mineralization, alteration)
			ON-BACK	

PTI SOIL PROFILE DESCRIPTION

Area/Location: South of RSS02 | Approx. Elevation: _____ | Contract No.: CA47-05-01 | Legal Description:

Vegetation: Grasses | kinickinick (sp?) | Slope: 8% | Date: 5/23/95 | T_____ R_____ Sec._____

Parent Material: Colluvium | Aspect: N, NE, E, SE, S, SW, (W), NW | Moisture: dry to _____ moist to 6" sl. moist to ____ wet to _____ | Station No.: RSS03

Physiography: side slope | Relief: (convex), concave, planar | % Coarse Frag: 25%

Current Land Use: Undevel Residential | Drainage: excessive, (somewhat excessive) well, moderately well, somewhat poorly, poorly, very poorly | Erosion Type: sheet, (rill), gully, wind | Control Section Depth: 6"

Profile described by: Boyd

Additional Comments: ~~Alluvium~~ Colluvium undisturbed, Soil covering alluvium : 60% dirty ss, 35% sts sh, 5% limestone little mineralization noted

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
JCB A	0-2"	10YR 2/2	silt loam	(1),2,3 vf,f,m,c,vc gr,pl,(sbk),abk pr,cl,m,sg	lo,vfr (fr),fi vfi,efi	(eo),evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,(3) vf,f (m),c	15%	5%	5%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RSS04 Project Name RICO

Location RSS04 8,10 Project Number CA47-05-01

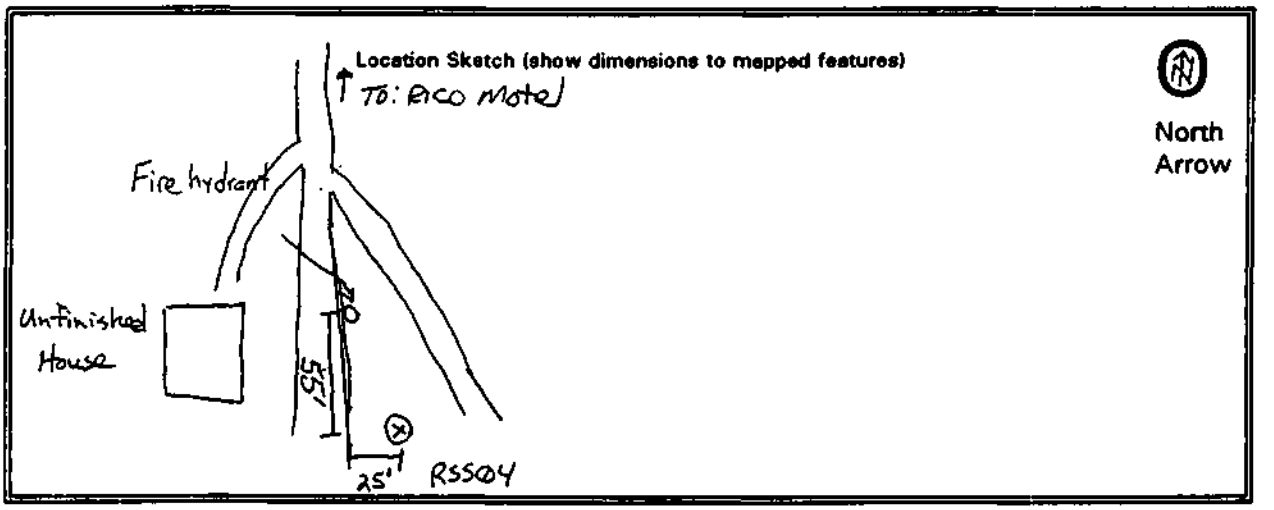
Sample Number S00004 Tag Number 77829

Date 5-23-95 Time 11:00 Photographic Roll RICO1 Number 13

Weather Conditions Partly cloudy

Ground Surface Conditions Un-dist.

Sampler Name Jeff Paul



Depth Status | Unified Symbol

		Soil Description	Comments (color, odor, texture, mineralization, alteration)
		ON BACK	

PTI SOIL PROFILE DESCRIPTION

Area/Location: E,10 | Approx. Elevation: | Contract No.: CA47-05-01 | Legal Description:

Vegetation: Grasses / Aspen | Slope: 5% | Date: 5-23-95 | T ___ R ___ Sec. ___

Parent Material: Colluvium | Aspect: N, NE, E, SE, S, (SW) W, NW | Moisture: dry to ___ moist to 6" sl. moist to ___ wet to ___ | Station No.: RSS04

Physiography: Side slope | Relief: convex, (concave), planar | % Coarse Frag: 15%

Current Land Use: Undeveloped Residential | Drainage: (excessive), somewhat excessive well, moderately well, somewhat poorly, poorly, very poorly | Erosion Type: sheet, (rill), gully, wind | Control Section Depth: 6"

Profile described by: BOYD

Additional Comments: Parent material - ~~70~~ 55% hornblende/latite, ~~5~~ 20% quartzite, ~~5~~ 20% dirty s.s., 20% shale. Some Fe pyrite observed in soil. Very little coarse frags. No outcrops observed in close proximity Non-disturbed area.

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-6"	10yr 2/2	Loam	(1),2,3 vf,(f),m,c,vc gr,pl,(sbk),abk pr,cl,m,sg	lo,(vfr) fr,fi vfi,efi	(eo),evsl esl,estr ev	a,c,g,d s/w,i,b	0,1,(2),3 vf,f m,(c)	5%	5%	5%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RS505 Project Name RICO

Location East edge of town Project Number CA47-05-01

Sample Number S00005 Tag Number

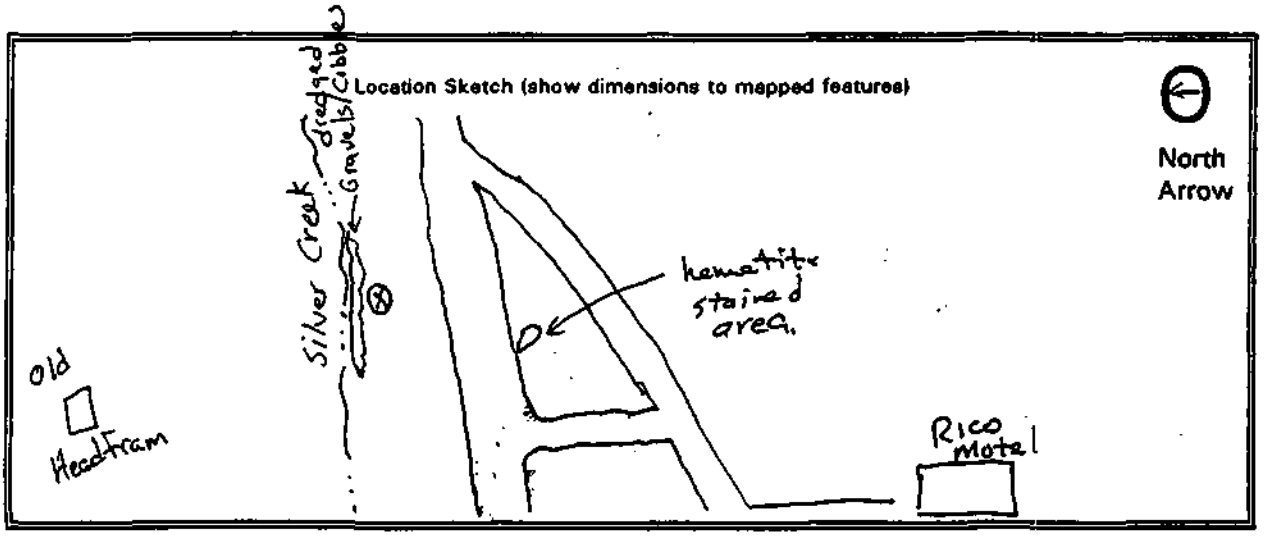
Date 5/25/95 Time 11:25 Photographic Roll RICO 1 Number 14

Weather Conditions Partly cloudy

Ground Surface Conditions

Sampler Name Jeff Paul

Location Sketch (show dimensions to mapped features)



Depth Status | Unified Symbol

		Soil Description	Comments (color, odor, texture, mineralization, alteration)
		ON - Back	

CA470501\SoilSamp.Frm

PTI SOIL PROFILE DESCRIPTION

Area/Location: East edge of Town

Approx. Elevation: _____

Contract No.: CA47-05-01

Legal Description:

Vegetation: Grasses, willows, Aspens

Slope: 2%

Date: 5/23/95

T _____ R _____ Sec. _____

Parent Material: Alluvium

Aspect: N, NE, E, SE, S, (SW), W, NW

Moisture: dry to _____ moist to 6"
sl. moist to ___ wet to _____

Station No.: RS505

Physiography: Floodplain

Relief: (convex), concave, planar

% Coarse Frag: 45%

Current Land Use: Undeveloped Residential

Drainage: excessive, somewhat excessive well, (moderately well), somewhat poorly, poorly, very poorly

Erosion Type: sheet, (rill), gully, wind

Control Section Depth: 6"

Profile described by: BOYD

Additional Comments: Parent material - 70% dirty s.s. 10, shale, 10% limestone (outcrop on opposite side of creek). No Fe-pyrite observed. Small micas (biotite, muscovite, phlogopite observed). Limited sulfides observed. Some propolitic alt. observed in gravel pile. Limited hematite staining observed on opposite side of the road.

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-6"	10 yr 3/4	Gravelly Sandy Loam	1,(2),3 vf,f,(m),c,vc gr,pl,(sbk),abk pr,cl,m,sg	lo,(vfr) fr,fi vfi,efi	(eo),evsl esl,estr ev	~~a,c,g,d~~ ~~s,w,i,b~~	0,1,(2),3 vf,(f) m,c	25%	10%	10%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

misc\soilprof.frm

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RSS06 (SED) Project Name RICO

Location Rico Motel Office Project Number CA47-05-01

Sample Number S00006 Tag Number 77831

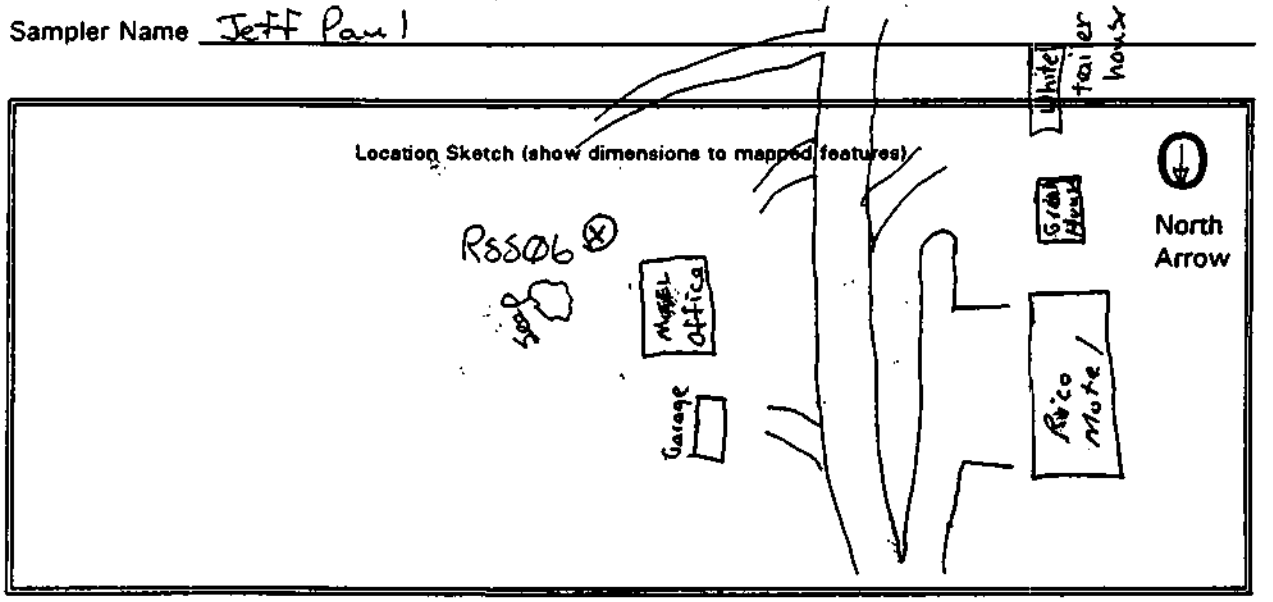
Date 5/23/95 Time 12:00 Photographic Roll RICO1 Number 15

Weather Conditions Mostly cloudy, breezy ~ 50°F

Ground Surface Conditions

Sampler Name Jeff Paul

Location Sketch (show dimensions to mapped features)



Depth Status | Unified Symbol

		Soil Description	Comments (color, odor, texture, mineralization, alteration)
		ON-BACK	

PTI SOIL PROFILE DESCRIPTION

Area/Location: _____ Approx. Elevation: _____ Contract No.: CA47-05-01 Legal Description:

Vegetation: Grass / Aspens Slope: 5% Date: 5/23/95 T____ R____ Sec.____

Parent Material: Colluvium Aspect: N, NE, E, SE, S, SW, W, (NW) Moisture: dry to ____ moist to ____ sl. moist to (6") wet to ____ Station No.: RS506

Physiography: Side Slope Developed Relief: (convex,) concave, planar % Coarse Frag: 70%

Current Land Use: Residential Drainage: excessive, somewhat excessive well, (moderately well,) somewhat poorly, poorly, very poorly Erosion Type: sheet, (rill,) gully, wind Control Section Depth: 6"

Profile described by: BOYD

Additional Comments: - Arkosic sandstone is predominate parent material, Little siltstone & limestones. No Fe pyrite observed by a mod. amount of quartz in sample. No heavy mineralization observed. Area has been disturbed. Small seep above sample area

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-6"	10yr 3/3	Silt Loam	(1,2,3) (vf,f,m,c,vc) gr,pl,(sbk,)abk pr,cl,m,sg	lo,(vfr) fr,fi vfi,efi	eo,(evsl) esl,estr ev	a,c,g,d s,w,i,b	0,1,(2,3) vf,(f) (m,c)	40%	20%	10%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

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RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RSS07 Project Name RICO

Location Behind Stan Foster's house Project Number CA47-05-01

Sample Number S000007 Tag Number 77832

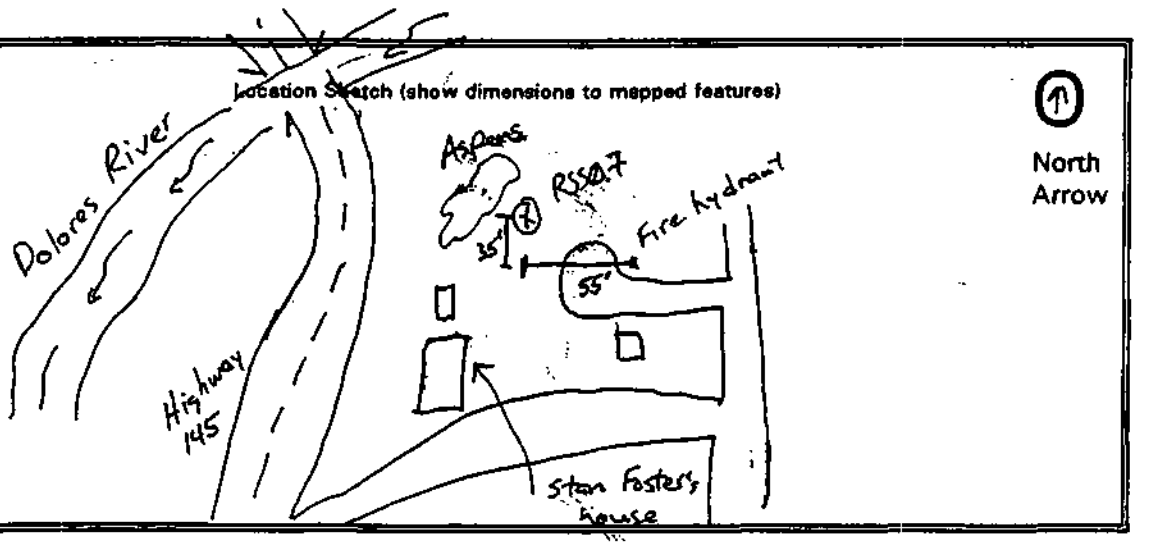
Date 5/23/95 Time 12:30 Photographic Roll RICO1 Number 16

Weather Conditions Mostly cloudy, breezy ~50°F

Ground Surface Conditions

Sampler Name Jeff Paul

Location Sketch (show dimensions to mapped features)



Depth	Status	Unified Symbol	Soil Description	Comments (color, odor, texture, mineralization, alteration)
			ON - Back	

PTI SOIL PROFILE DESCRIPTION

Area/Location: RSS@7 | Approx. Elevation: | Contract No.: CA47-05-01 | Legal Description:

Vegetation: Grass / Aspen | Slope: 2% | Date: 5/23/95 | T ___ R ___ Sec. ___

Parent Material: Colluvium | Aspect: N, NE, E, SE, S, SW, W, NW | Moisture: dry to ___ moist to ___ sl. moist to 6" wet to ___ | Station No.: RSS@7

Physiography: Bench or alluvial fan (Undeveloped) | Relief: convex, concave, planar | % Coarse Frag: 45%

Current Land Use: Residential | Drainage: excessive, somewhat excessive, well, moderately well, somewhat poorly, poorly, very poorly | Erosion Type: sheet, rill, gully, wind | Control Section Depth: 6"

Profile described by: Boyd

Additional Comments: Area is slightly disturbed, some construction debris (glass, brick). Some pyrite observed. No hematite staining. Coal observed in area.

Parent material = Arkosic sandstones, siltstones & shales

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-6"	10 yr 3/4	Silt Loam	1,(2),3 vf,(f),m,c,vc gr,pl,(sbk),abk pr,cl,m,sg	lo,vfr fr,(fi) vfi,efi	eo,(evsl) esl,estr ev	a,c,g,d s,w,i,b	0,1,(2),3 (vf),f m,c	30%	10%	5%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

misc\soilprof.Frm

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RSS08 Project Name RICO

Location 9,18 Project Number CA47-05-01

Sample Number S00008 Tag Number

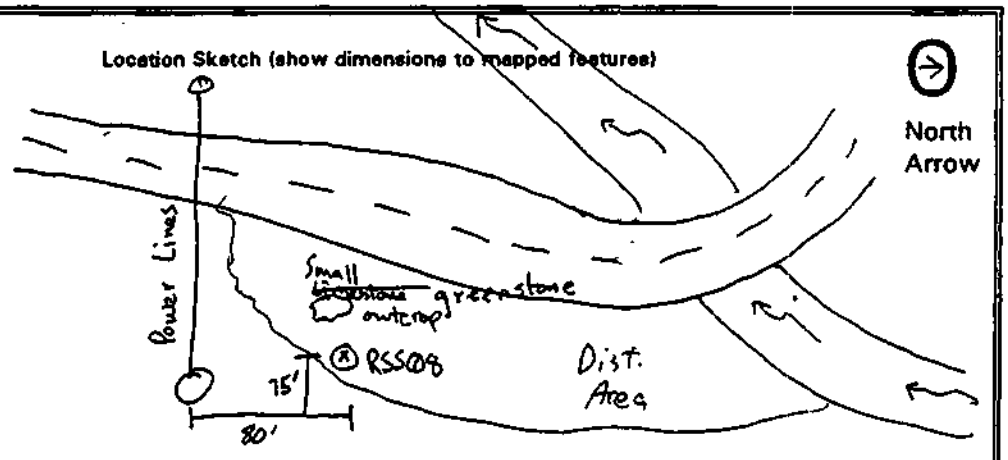
Date 5/23/95 Time Photographic Roll RICO1 Number 17

Weather Conditions Mostly cloudy ~ 50°F

Ground Surface Conditions Disturbed (heavily) little veg. const. debris prevalent

Sampler Name Mike Boyd

Location Sketch (show dimensions to mapped features)



Depth	Status	Unified Symbol	Soil Description	Comments (color, odor, texture, mineralization, alteration)
			ON Back	

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PTI SOIL PROFILE DESCRIPTION

Area/Location: RSS08 9,18 | Approx. Elevation: _____ | Contract No.: CA47-05-01 | Legal Description:

Vegetation: Little grass | Slope: 2% | Date: 5-23-95 | T _____ R _____ Sec. _____

Parent Material: Alluvium | Aspect: N, NE, E, SE, S, SW, W, (NW) | Moisture: dry to _____ moist to _____ sl. moist to 4" wet to _____ | Station No.: RSS08

Physiography: Terrace | Relief: (convex), concave, planar | % Coarse Frag: 65%

Current Land Use: None - dist. Could have possibly been local of old assay shed. (lots of core samples spread around) | Drainage: excessive, somewhat excessive, well, moderately well, (somewhat poorly), poorly, very poorly | Erosion Type: (sheet), rill, gully, wind | Control Section Depth: 6

Profile described by: Boyd

Additional Comments:

Area has been previously disturbed, could have been old assay lab site? Much slag & core samples spread out over area. Heavy Fe pyrite observed. Some hematite staining. Construction debris (brick, wood, metal) observed.

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-4"	10yr 2/2	Loam	1,(2),3 vf,(f),m,c,vc gr,pl,(sbk),abk pr,cl,m,sg	lo,vfr fr,(fi) vfi,efi	eo,(evsl) esl,estr ev	a,c,g,d s,w,i,b	(0),1,2,3 vf,f m,c	50%	10%	5%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RSS09 Project Name RICO

Location Hill above Rico Boy mine Project Number CA47-05-01

Sample Number 500009 Tag Number 77834

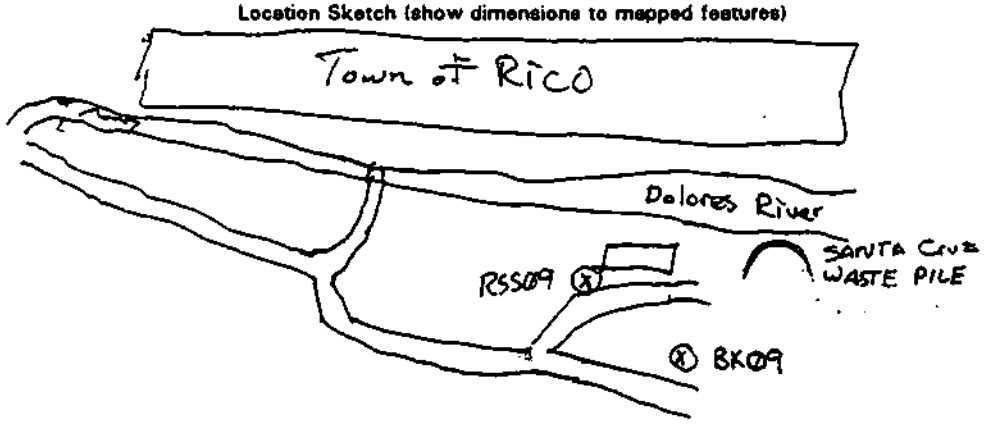
Date 5/24/95 Time 09:20 Photographic Roll RICO1 Number 25

Weather Conditions Mostly cloudy ~ 50°F

Ground Surface Conditions Grass / Evergreens

Sampler Name Jeff Paul

Location Sketch (show dimensions to mapped features)



Depth	Status	Unified Symbol	Soil Description	Comments (color, odor, texture, mineralization, alteration)
			ON-BACF	

CA470501\SoilSamp.Frm

PTI SOIL PROFILE DESCRIPTION

Area/Location: _____ Approx. Elevation: _____ Contract No.: CA447-05-01 Legal Description:

Vegetation: Grass/Evergreen/Aspen Slope: 1% Date: 5/24/95 T____ R____ Sec.____

Parent Material: Colluvium Aspect: N, (NE) E, SE, S, SW, W, NW Moisture: dry to ____ moist to ____ sl. moist to ____ wet to ____ Station No.: R5509

Physiography: Edge of Floodplain Undeveloped Relief: convex, (concave), planar % Coarse Frag: 5%

Current Land Use: Residential Drainage: excessive, somewhat excessive well, moderately well, (somewhat poorly), poorly, very poorly Erosion Type: (sheet), rill, gully, wind Control Section Depth: 6"

Profile described by: BOYD

Additional Comments: Parent material- qtz, muscovite & dirty sandstone & siltstone. Some Fe pyrite & iron oxides.

Area is undisturbed

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-6"	10yr 2/2	SILT Loam	1 (2) 3 vf (f) m,c,vc gr,pl,(sbk),abk pr,cl,m,sg	(lo), vfr fr,fi vfi,efi	eo,evsl (esl) estr ev	a,c,g,d s,w,i,b	0, 1, (2) 3 vf,f (m),c	5%		
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RSS10 Project Name RICO

Location 3,11 grid- Skip Zeller Project Number CA47-05-01

Sample Number S00010 Tag Number 77835

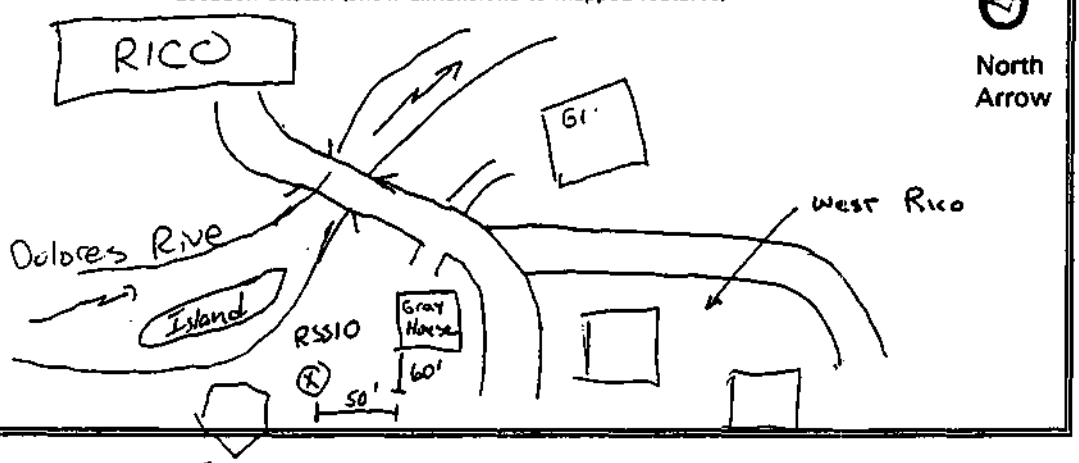
Date 5/24/95 Time 10:30 Photographic Roll RICO2 Number 1

Weather Conditions Cloudy, cool ~45°F

Ground Surface Conditions Disturbed residential

Sampler Name Jeff Paul

Location Sketch (show dimensions to mapped features)



Depth	Status	Unified Symbol	Soil Description	Comments (color, odor, texture, mineralization, alteration)
			ON-Rock	

PTI SOIL PROFILE DESCRIPTION

Area/Location: _____ Approx. Elevation: _____ Contract No.: CA47-05-01 Legal Description:

Vegetation: Grass, pussy willows, aspen Slope: 3% Date: 5-25-95 T____ R____ Sec.____

Parent Material: Sandstones (alluvium) Aspect: N, NE, E, SE, S, SW, W, NW Moisture: dry to _____ moist to _____ sl. moist to 6" wet to _____ Station No.: RSS10

Physiography: Terrace Disturbed Relief (convex,) concave, planar % Coarse Frag: 70%

Current Land Use: Residential Drainage: excessive, somewhat excessive (well,) moderately well, somewhat poorly, poorly, very poorly Erosion Type: sheet, (rill,) gully, wind Control Section Depth: 6"

Profile described by: Boyd

Additional Comments: Disturbed native soils. No Fe pyrite, iron oxides or alterations observed.

Split sample collected for Landowner per access agreement.

Parent material- dirty sandstones & shales, some limestones observed

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A'	0-6"	10 yr 2/2	Gravelly Sandy Loam	(1),2,3 (vf),f,m,c,vc (gr),pl,sbk,abk pr,cl,m,sg	(lo),vfr fr,fi vfi,efi	eo,(evsl) esl,estr ev	a,c,g,d s,w,i,b	0,1,(2),3 (vf),f m,(c)	50%	10%	10%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RSS11 Project Name RICO

Location Dolores R. floodplain Project Number CA47-05-01

Sample Number S00011 Tag Number 77836

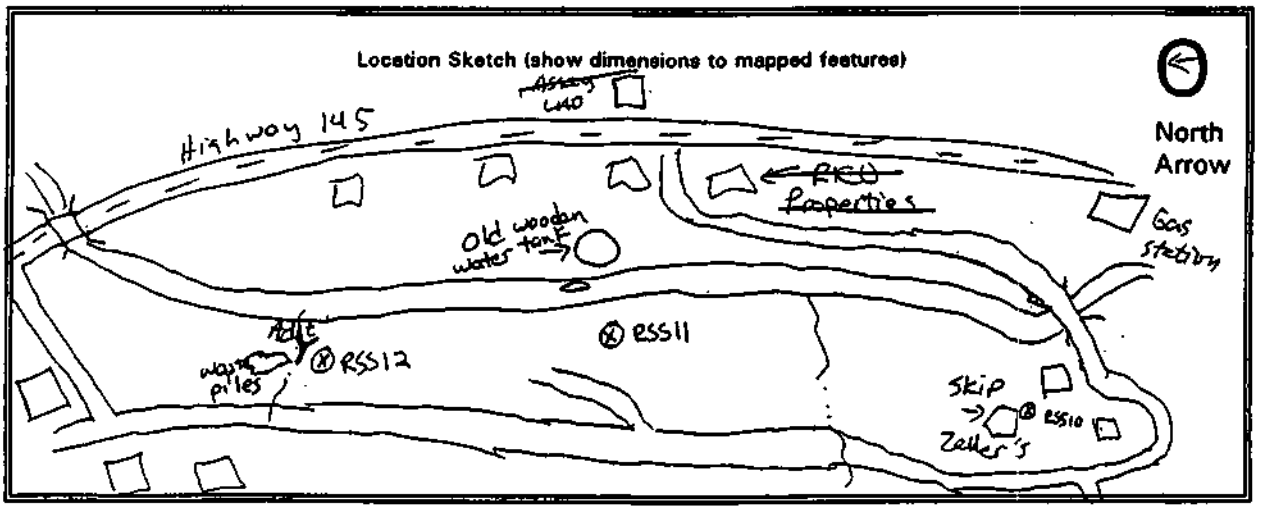
Date 5/24/95 Time 11:00 Photographic Roll RICO 2 Number 2

Weather Conditions Mostly cloudy, breezy ~45°F

Ground Surface Conditions Cobbly, grassy area w/ pussy willows

Sampler Name Jeff Paul

Location Sketch (show dimensions to mapped features)



Depth	Status	Unified Symbol	Soil Description	Comments (color, odor, texture, mineralization, alteration)
			ON BACK	

CA470601\SoilSamp.Frm

PTI SOIL PROFILE DESCRIPTION

Area/Location: Dolores R. Floodpl Approx. Elevation: _____ Contract No.: CA47-05-01 Legal Description:

Vegetation: Grasses/willows Slope: 0-2% Date: 5-24-95 T____ R____ Sec.____

Parent Material: Alluvium Aspect: N, (NE) E, SE, S, SW, W, NW Moisture: dry to _____ moist to _____ Station No.: RSS11

Physiography: Edge of terrace/floodplain Relief: (convex) concave, planar sl. moist to 6" wet to _____ % Coarse Frag.: 25%

Current Land Use: Non-dist. Residential Drainage: excessive, ~~somewhat excessive~~ well, (moderately well,) somewhat poorly, poorly, very poorly Erosion Type: (sheet, rill,) gully, wind Control Section Depth: 6"

Profile described by: Boyd

Additional Comments: Non-dist. residential area.

Parent material = limestone, dirty s.s. & siltstones
= Fe pyrite
= epidote & chlorite alter.
= slight iron oxid.
C horizon observed in bank @ approx 8-10"

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A/C	0-6"	10yr 2/2	Loam	1 (2) 3 vf (f) m,c,vc gr,pl (sbk) abk pr,cl,m,sg	lo,vfr (fr) fi vfi,efi	eo,evsl (esl) estr ev	a,c,g,d s,w,i,b	0 (1) 2,3 vf (f) m (c)	15%	5%	5%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RSS12 Project Name RICO

Location 3,14 Grid, west of River Project Number CA47-05-01

Sample Number SO0012 Tag Number 77837

Date 5/24/95 Time 11:40 Photographic Roll R102 Number 4

Weather Conditions

Ground Surface Conditions Flat grass covered

Sampler Name Jeff Paul

Location Sketch (show dimensions to mapped features)

O
North
Arrow

See sketch for RSS11

Depth Status | Unified Symbol

		Soil Description	Comments (color, odor, texture, mineralization, alteration)

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PTI SOIL PROFILE DESCRIPTION

Area/Location: _____ Approx. Elevation: _____ Contract No.: CA47-05-01 Legal Description:

Vegetation: Grasses w/ dandelions Slope: 0-2% Date: 5-24-95 T___ R___ Sec.___

Parent Material: Alluvium Aspect: N, NE, (E), SE, S, SW, W, NW Moisture: dry to ___ moist to ___ sl. moist to 6" wet to ___ Station No.: RSS13

Physiography: Terrace Relief: convex, concave, (planar) % Coarse Frag: 55%

Current Land Use: Undist. Res. Area Drainage: excessive, somewhat excessive well, moderately well, (somewhat poorly), poorly, very poorly Erosion Type: (sheet), rill, gully, wind Control Section Depth: 6"

Profile described by: Boyp

Additional Comments: Parent material - dirty s.s. & siltstones
- fe pyrite observed
- No alts little iron oxides
Mine adit observed ± 30' due north of sample area
Waste piles on other side of drainage above adit

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A/C	0-6"	10YR 2/1	Gravelly SILT Loam	1(2)3 vf,f(m)c,vc gr,pl,sbk(abk) pr,cl,m,sg	lo,vfr fr(fi) vfi,efi	(eo),evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2(3) vf,f (m,c)	45%	5%	5%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

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RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RSS13 Project Name RICO

Location _____ Project Number CA47-05-01

Sample Number 500013 Tag Number 77838

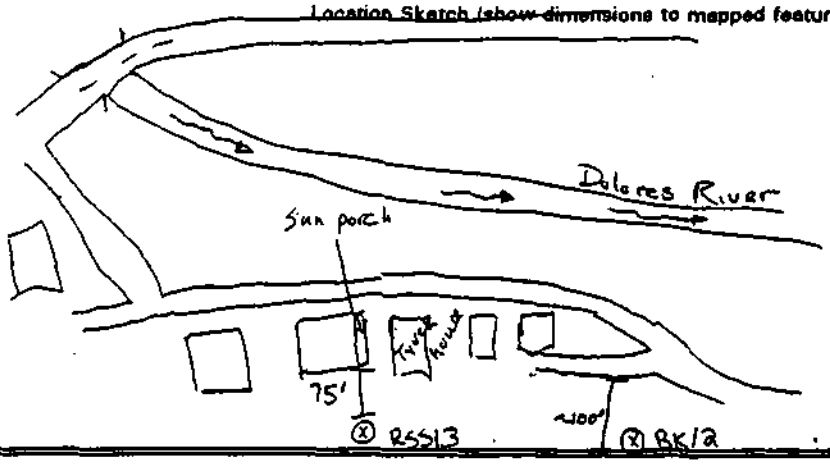
Date 5-24-95 Time 13:30 Photographic Roll RICO 2 Number 5

Weather Conditions Sunny, windy, ~50°F

Ground Surface Conditions Boulders, grass sideslope w/ many aspens

Sampler Name J. Carter Borden

Location Sketch (show dimensions to mapped features)



Depth Status | Unified Symbol

		Soil Description	Comments (color, odor, texture, mineralization, alteration)
		OA Back	

CA470501\SoilSamp.frm

PTI SOIL PROFILE DESCRIPTION

Area/Location: _____ Approx. Elevation: _____ Contract No.: CA47-05-01 Legal Description:

Vegetation: Grass / Aspens Slope: 5% Date: 5/24/95 T____ R____ Sec.____

Parent Material: Colluvium (native) Aspect: N, NE, (E), SE, S, SW, W, NW Moisture: dry to ____ moist to ____ sl. moist to 6" wet to ____ Station No.: RSS13

Physiography: Sideslope Relief: (convex), concave, planar % Coarse Frag: 70%

Current Land Use: Undeveloped residential Drainage: excessive, somewhat excessive well, (moderately well), somewhat poorly, poorly, very poorly Erosion Type: (sheet, rill,) gully, wind Control Section Depth: 6"

Profile described by: BOYD

Additional Comments: Parent material - dirty S.S. & siltstones
- some Fe pyrites & hematite stains
- K-spar alteration
- epidote alter.

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-6"	10yr 3/3	Gravelly Silt Loam	1,(2),3 (vf,f),m,c,vc gr,pl,sbk,abk pr,cl,m,sg	lo,vfr (fr),fi vfi,efi	eo,(evsl) esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f (m,c)	40%	10%	20%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

misc\soilprof Frm

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID: RSS14 Project Name: RICO

Location: 5,18 grid P. Conrad Project Number: CA47-05-01

Sample Number: 500014 Tag Number: 77839

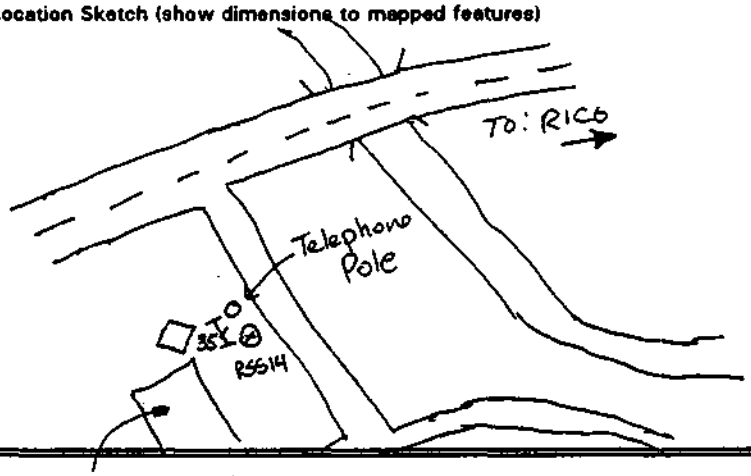
Date: 5/24/95 Time: 14:15 Photographic Roll: RICO2 Number: 7

Weather Conditions: Mostly cloudy, breezy ~ 50°F

Ground Surface Conditions: Lawn (native - per owner)

Sampler Name: Jeff Paul

Location Sketch (show dimensions to mapped features)



Depth	Status	Unified Symbol	Soil Description	Comments (color, odor, texture, mineralization, alteration)
			ON-Back	

PTI SOIL PROFILE DESCRIPTION

Area/Location: 5,19 Pauline Conrad Approx. Elevation: _____ Contract No.: CA47-05-01 Legal Description:

Vegetation: Grass / dandelions Slope: 0-2% Date: 5-24-95 T ____ R ____ Sec. ____

Parent Material: Alluvium Aspect: N, NE, E, (SE), S, SW, W, NW Moisture: dry to ____ moist to ____ sl. moist to 6" wet to ____ Station No.: RSS14

Physiography: Bench Relief: convex, (concave), planar % Coarse Frag: 50%

Current Land Use: Landscaped Lawn (native) Drainage: excessive, somewhat excessive, well, moderately well, somewhat poorly, poorly, very poorly Erosion Type: (sheet), (rill), gully, wind Control Section Depth: 6"

Profile described by: Boyp

Additional Comments:
- Little pyrite observed
- Mix of parent materials - s.s. shales, siltstones, limestone etc.
- Owner says lawn area is native (not disturbed).
- Area was not staked

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A'	0-6"	10yr 2/2	Sandy Loam	(1),2,3 vf,(f),m,c,vc gr,pl,(sbk),abk pr,cl,m,sg	lo,(vfr) fr,fi vfi,efi	eo,(evsl) esl,estr ev	a,c,g,d s/w,i,b	0,1,(2),3 (vf,f) m,c	40%	5	5
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RSS15 Project Name RICO

Location 5,17 (RDC) Project Number CA47-05-01

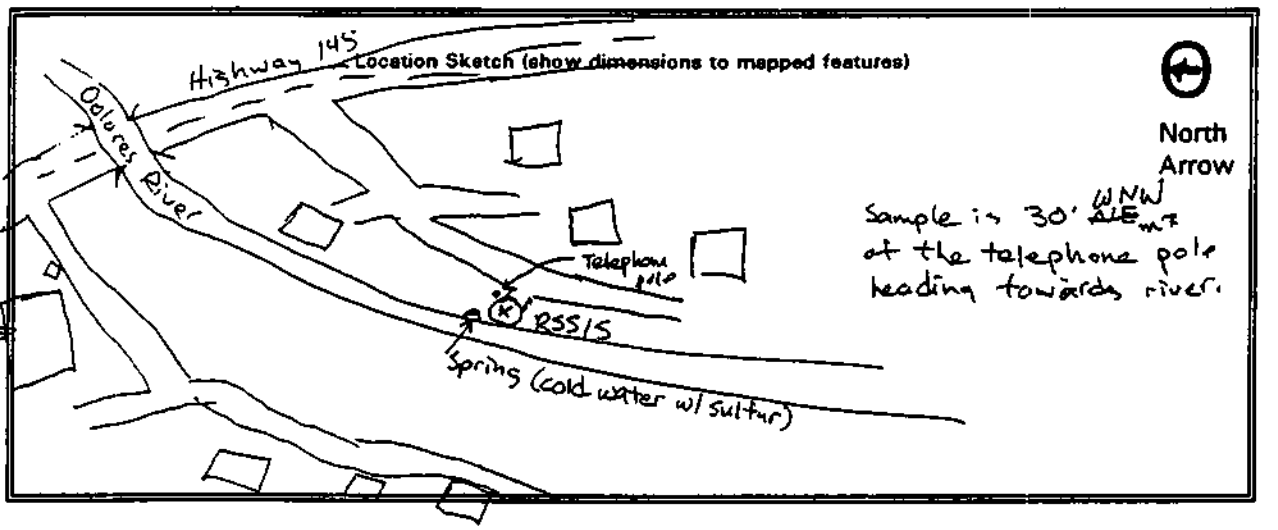
Sample Number 500015 Tag Number

Date 5-24-95 Time 14:40 Photographic Roll RICO 2 Number 8

Weather Conditions Mostly cloudy, breezy ~

Ground Surface Conditions Very cobbly alluvium w/ willows

Sampler Name Jeff Paul



Depth	Status	Unified Symbol	Soil Description	Comments (color, odor, texture, mineralization, alteration)
			ON-Rock	

PTI SOIL PROFILE DESCRIPTION

Area/Location: 5,17 (RDC)
Approx. Elevation: _____
Contract No.: CA47-05-01
Legal Description:

Vegetation: Grasses & willows
Slope: 0-2%
Date: 5-24-95
T _____ R _____ Sec. _____

Parent Material: Alluvium
Aspect: N, NE, E, SE, S, SW, W, (NW)
Moisture: dry to _____ moist to _____ sl. moist to 4" wet to _____
Station No.: RSS 15

Physiography: Floodplain
Relief: convex, (concave), planar
% Coarse Frag: 65%

Current Land Use: Undeveloped residential
Drainage: excessive, somewhat excessive, well, moderately well, (somewhat poorly), poorly, very poorly
Erosion Type: (sheet, rill,) gully, wind
Control Section Depth: 4"

Profile described by: BOYD

Additional Comments: Cold water spring located NE (50m) from sample pt. by river.
- Area is dist. - no evidence of imported fill.
- Some Fe pyrite
- No alt. e.
- Slight iron oxide.

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-4"	10yr 3/4	V.F. Loamy Sand	(1),2,3 (vf),f,m,c,vc gr,pl,sbk,abk pr,cl,m,(sg)	(lo),vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,(2),3 vf,f (m,c)	40%	15%	10%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RSS16 Project Name RICO

Location 4,16 Project Number CA47-05-01

Sample Number S0016 Tag Number

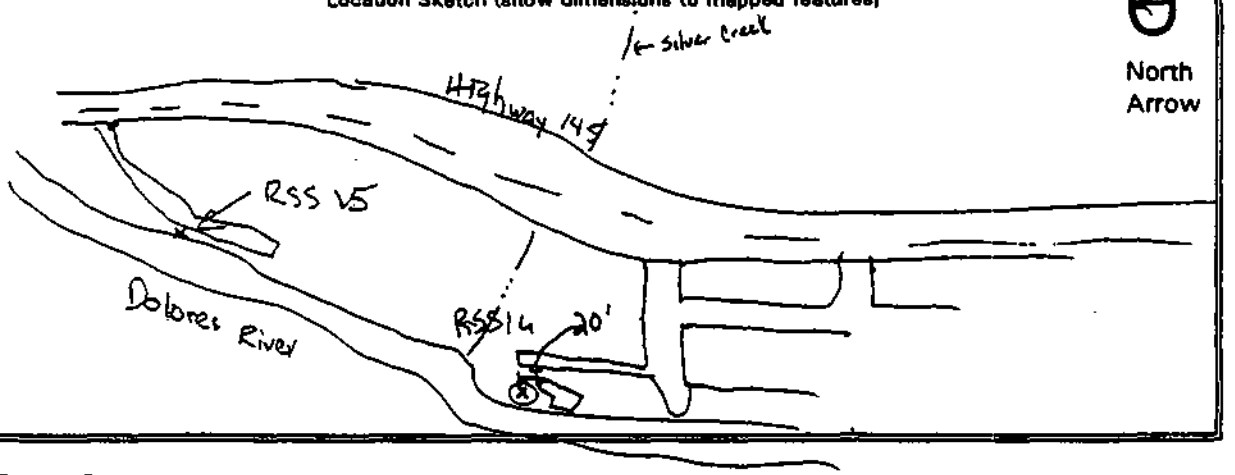
Date 5/24/95 Time 15:45 Photographic Roll RICO2 Number 9

Weather Conditions

Ground Surface Conditions

Sampler Name Jeff Paul

Location Sketch (show dimensions to mapped features)



Depth	Status	Unified Symbol	Soil Description	Comments (color, odor, texture, mineralization, alteration)
			ON - Back	

CA470501\SoilSamp.Frm

PTI SOIL PROFILE DESCRIPTION

Area/Location: 4,16 | Approx. Elevation: _____ | Contract No.: CA47-05-01 | Legal Description:

Vegetation: None - sand bar | Slope: 0-2% | Date: 5-24-95 | T_____ R_____ Sec._____

Parent Material: Alluvium | Aspect: N, NE, E, SE, S, (SW), W, NW | Moisture: dry to 6" moist to _____ sl. moist to ___ wet to _____ | Station No.: RSS16

Physiography: Sand bar | Relief: convex, (concave), planar | % Coarse Frag: 80%

Current Land Use: Disturbed Developed Ra | Drainage: excessive, (somewhat excessive) well, moderately well, somewhat poorly, poorly, very poorly | Erosion Type: (sheet) rill, gully, wind | Control Section Depth: 6"

Profile described by: BoYp

Additional Comments: - Fe pyrite - none
- Iron oxides heavy
- Lots of qtz

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
C"	0-6"	Gravelly Loamy Sand	dark reddish brown 5yr 3/2	(1),2,3 vf,(f),m,c,vc (gr),pl,sbk,abk pr,cl,m,sg	(lo),vfr fr,fi vfi,efi	(eo),evsl esl,estr ev	a,c,g,d s,w,i,b	0,(1),2,3 vf,f (m,c)	60%	15%	5%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RSS17 Project Name RICO

Location 5,14 - Kernbluh 15N. River St Project Number CA47-05-01

Sample Number SOO017 Tag Number 77842

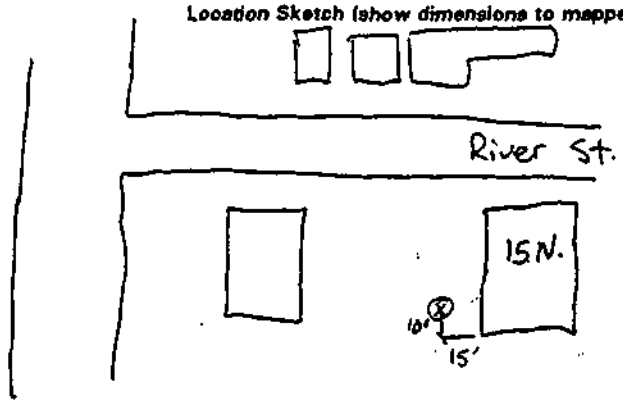
Date 5/24/95 Time 16:00 Photographic Roll RICO 9 Number 10

Weather Conditions Cloudy, breezy ~ 45°F

Ground Surface Conditions Const. rubble, grass, garbage

Sampler Name Jeff Paul

Location Sketch (show dimensions to mapped features)



North Arrow

Depth | Status | Unified Symbol

			Soil Description	Comments (color, odor, texture, mineralization, alteration)
			ON BACK	

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PTI SOIL PROFILE DESCRIPTION

Area/Location: S,14 | Approx. Elevation: | Contract No.: CA47-05-01 | Legal Description:

Vegetation: Grass | Slope: 2% | Date: 5-24-95 | T___ R___ Sec.___

Parent Material: Fill | Aspect: N, NE, E, SE, S, SW, W, (NW) | Moisture: dry to ___ moist to ___ sl. moist to 6" wet to ___ | Station No.: RSS17

Physiography: Bench above river | Relief: (convex), concave, planar | % Coarse Frag: 50%

Current Land Use: Residential Disturbed | Drainage: excessive, somewhat excessive well, (moderately well), somewhat poorly, poorly, very poorly | Erosion Type: (sheet), rill, gully, wind | Control Section Depth: 6"

Profile described by: Boyd

Additional Comments: Fill material w/ brick, wood & glass - Heavily disturbed.

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-6"	10yr 2/2	Gravelly Silt Loam	(1) 2,3 vf,(f),m,c,vc gr,pl,(sbk),abk pr,cl,m,sg	(lo),vfr fr,fi vfi,efi	(eo),evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,(2),3 (vf,f) m,c	35%	10%	5%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RSS 18 Project Name RICO

Location 6, 10 Project Number CA47-05-01

Sample Number S0019 Tag Number 77844

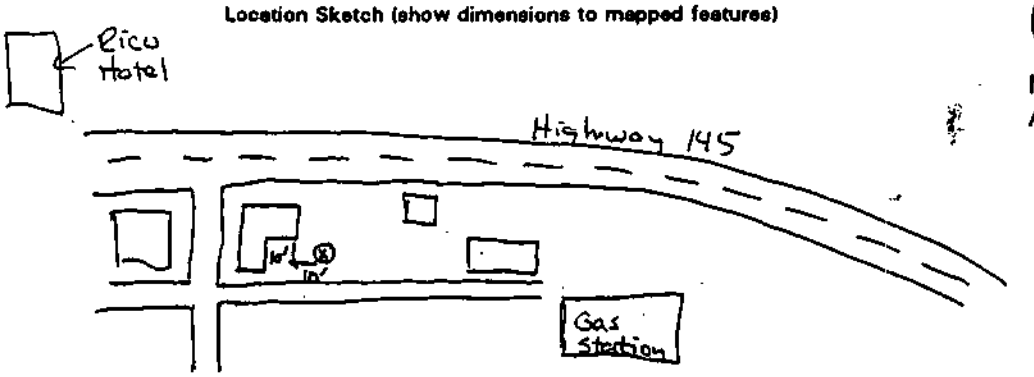
Date 6/24/95 Time 17:00 Photographic Roll RICO Number 12

Weather Conditions Cloudy, breezy

Ground Surface Conditions Disturbed lawn areas

Sampler Name J. Carter Borden

Location Sketch (show dimensions to mapped features)



Depth	Status	Unified Symbol	Soil Description	Comments (color, odor, texture, mineralization, alteration)
			On-Back	

PTI SOIL PROFILE DESCRIPTION

Area/Location: 6, 10 | Approx. Elevation: _____ | Contract No.: CA47-05-01 | Legal Description:

Vegetation: Lawn | Slope: 0-2% | Date: 5/24/95 | T ____ R ____ Sec. ____

Parent Material: Colluvium | Aspect: N, NE, E, SE, S, SW, (W), NW | Moisture: dry to ____ moist to ____ sl. moist to 6" wet to ____ | Station No.: RSS18

Physiography: Bench above river | Relief: convex, (concave), planar | % Coarse Frag: 35%

Current Land Use: Residential | Drainage: excessive, somewhat excessive, well, moderately well, (somewhat poorly), poorly, very poorly | Erosion Type: (sheet), rill, gully, wind | Control Section Depth: 6"

Profile described by: Boyd

Additional Comments:
- Disturbed fill
- No pyrite observed
- Heavy veg. cover
- No mineralization

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-6"	10yr 3/4	Silt Loam	(1)2,3 vf,(f),m,c,vc gr,pl,(sbk),abk pr,cl,m,sg	lo,vfr (fr),fi vfi,efi	(eo),evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2(3) (vf,f) m,c	20%	10%	5%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

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RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RSS19 Project Name RICO

Location E. Dolores River Project Number CA47-05-01

Sample Number 500020 Tag Number 77845

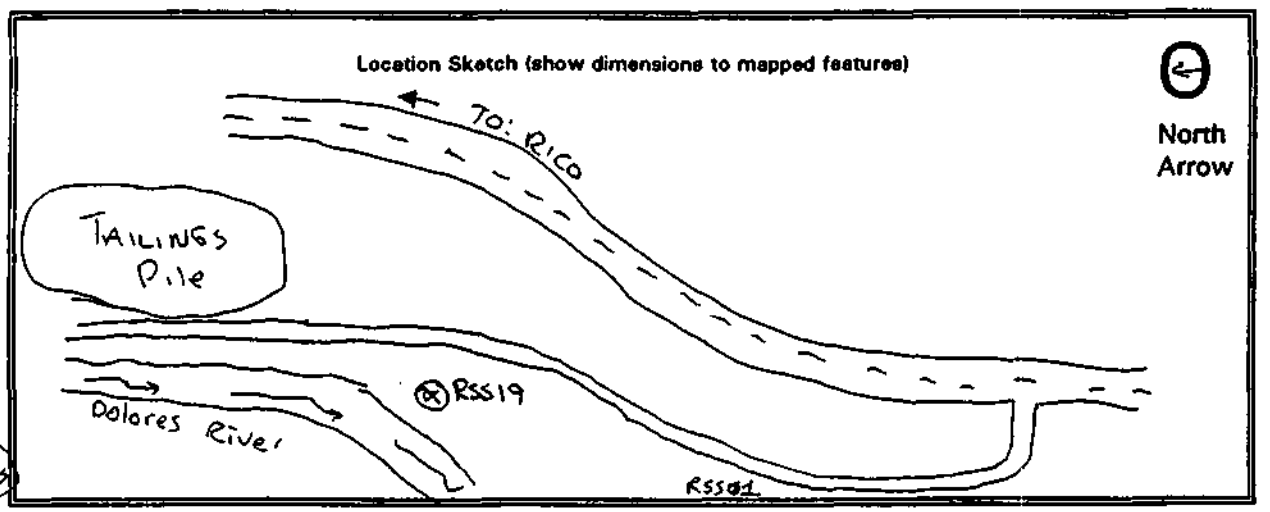
Date 5/24/95 Time 17:18 Photographic Roll RICO 2 Number 13

Weather Conditions Rain, windy ~40°F

Ground Surface Conditions Boulder Floodplain

Sampler Name J.Carter Borden

Location Sketch (show dimensions to mapped features)



Depth	Status	Unified Symbol	Soil Description	Comments (color, odor, texture, mineralization, alteration)
			ON - BACK	

PTI SOIL PROFILE DESCRIPTION

Area/Location: Dolores River Floodplain Approx. Elevation: ___ Contract No.: CA47-05-01 Legal Description:
camping area

Vegetation: Grasses Slope: 0-2% Date: 5-24-95 T___ R___ Sec.___

Parent Material: Alluvium Aspect: N, NE, E, SE, S (SW) W, NW Moisture: dry to ___ moist to 6" Station No.: RSS19
sl. moist to ___ wet to ___

Physiography: River Terrace Relief: convex, (concave), planar % Coarse Frag: 70%

Current Land Use: Recreational Drainage: excessive, somewhat excessive Erosion Type: (sheet), rill, gully, wind Control Section Depth: 6"
Non-dist. well, moderately well,
(somewhat poorly), poorly,
very poorly

Profile described by: BOYD

Additional Comments: - Area is downstream of large tailings piles (both sides of stream)
- No pyrite or alterations observed
- No mineralization observed in surrounding

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-4"	10yr 3/4	Gravelly sandy loam	(1),2,3 vf,f,(m),c,vc (gr),pl,sbk,abk pr,cl,m,sg	(lo),vfr fr,fi vfi,efi	(eo),evsl esl,estr ev	a,c,g,d s,w,i,b	0,(1),2,3 (vf),f (m),c	50%	10%	10%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

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Sample ID: RSS20, RNS2001, RNS2011 (JSP)

RICO SOIL SAMPLING FIELD DATA FORM

~~T8~~

Sample ID ~~RSS18~~ RSS20 (MB 5/24/95) Project Name RICO

Location ~~6,10~~ RICO Center Project Number CA47-05-01

Sample Number 500018 Tag Number 77843

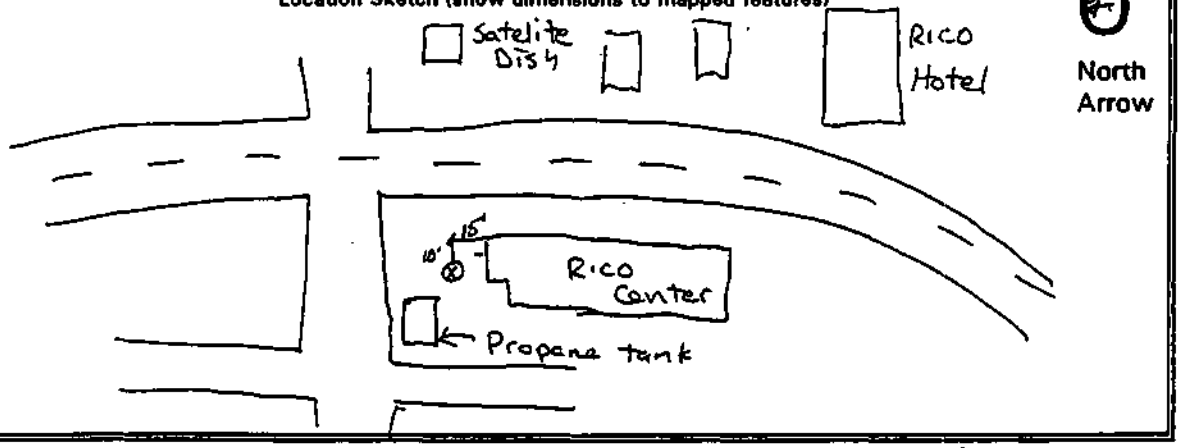
Date 5/24/95 Time ~~16:00~~ 16:15 (MB 5/24/95) Photographic Roll RICO 2 Number 11 & 17

Weather Conditions Rain, winds ~45°F

Ground Surface Conditions Dist. Fill area by RICO Center

Sampler Name Jeff Paul/Mike Boyd - Carter Borden

Location Sketch (show dimensions to mapped features)



Depth	Status	Unified Symbol	Soil Description	Comments (color, odor, texture, mineralization, alteration)	Time	Dist.
			on Back			
				Tag #		
			Sampled 0-2"	Sample # 500018 77843	1615	24-m
			RNS2001 2-10"	Sample # 500021 77846	0910	25-m
			RNS2011 10-18	Sample # 500022 77847	0950	25-m
			Prepared SRM NIST 2711	Sample # 500048		

*Note:

PTI SOIL PROFILE DESCRIPTION

Area/Location: MB 5/24/95 6,10 (RICO Center) Approx. Elevation: 0 Contract No.: CA47-05-01 Legal Description:

Vegetation: Grass Slope: 0-2% Date: 5-24-95 T___ R___ Sec.___

Parent Material: Colluvium Aspect: N, NE, E, SE, S, SW, (W), NW Moisture: dry to ___ moist to ___ sl. moist to 4" wet to ___ Station No.: ~~R5S18~~ T8

Physiography: Bench above river Relief: convex, concave, (planar) % Coarse Frag: 35%

Current Land Use: Dist. Residential/ Commercial Drainage: excessive, somewhat excessive well, moderately well, (somewhat poorly), poorly, very poorly Erosion Type: (sheet), rill, gully, wind Control Section Depth: 0-4"

Profile described by: BOTP

Additional Comments: No pyrite but micas present
Area has been previously disturbed
No mineralized rock present

Samples = 0-2"
2-10"
10-18"

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	MB 5/25/95 ~~0-4~~ 0-10'	10yr 2/1	Silt Loam	(1),2,3 (vf)f,m,c,vc gr,pl,sbk,(abk) pr,cl,m,sg	lo,vfr (fr),fi vfi,efi	eo,evsl (esl),estr ev	a,c,g,d s,w,i,b	0,1,(2),3 vf,(f) m,c	20%	10%	5%
C	~~ISP~~ 10-18'	~~10yr~~ 5yr ISP ~~2/1~~ 3/2	Gravelly Sand Loam	0,2,3 (vf)f,m,c,vc gr,pl,(sbk),abk pr,cl,m,st	lo,(vfr) fr,fi vfi,efi	eo,(evsl) esl,estr ev	a,(c),g,d ~~s~~ w,i,b	(0),1,2,3 vf,f m,c	~30%	~25%	Ø
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RSS21 Project Name RICO

Location S. Foster's Home Project Number CA47-05-01

Sample Number S00023 24 25 Tag Number 77848, 77849, 77850

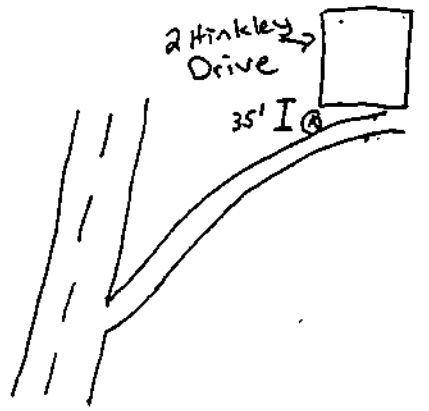
Date 5/25/95 Time 09:30 09:35 09:40 Photographic Roll RICO 2 Tmp 5/25/95 Number 18, 19 & 20

Weather Conditions Mostly cloudy

Ground Surface Conditions Grass

Sampler Name J. Carter Borden

Location Sketch (show dimensions to mapped features)



Depth | Status | Unified Symbol

		Soil Description	Comments (color, odor, texture, mineralization, alteration)
		ON Back	
		Sample Name / Sample # / Tag # / Date / Time	
		RSS21 / S00023 / 77848 / 25-May / 0930	
		RNS2101 / S00024 / 77849 / 25-May / 0935	
		RNS2111 / S00025 / 77850 / " / 0940	

PTI SOIL PROFILE DESCRIPTION

Area/Location: 2 Hinkley Dr. | Approx. Elevation: _____ | Contract No.: CA47-05-01 | Legal Description:

Vegetation: Grasses/Aspen | Slope: 3% | Date: 5/25/95 | T _____ R _____ Sec. _____

Parent Material: Colluvium | Aspect: N, NE, E, SE, S (SW) W, NW | Moisture: dry to _____ moist to 20" sl. moist to ____ wet to _____ | Station No.: RSS21

Physiography: Side slope | Relief: (convex,) concave, planar | % Coarse Frag: _____

Current Land Use: Disturbed residential | Drainage: excessive, somewhat excessive well, (moderately well,) somewhat poorly, poorly, very poorly | Erosion Type: (sheet, rill,) gully, wind | Control Section Depth: 20"

Profile described by: Boyd

Additional Comments: Ground surface is mostly road wash

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-16"	10yr 2/2	Silt Loam	(1)2,3 vf,(f),m,c,vc gr,pl,(sbk),abk pr,cl,m,sg	(lo),vfr fr,fi vfi,efi	eo,evsl (esl),estr ev	a,c,(g),d s,(w),i,b	0,1(2),3 vf,(f) m,c	0-2" ~50% 2"→ ~10%	—	—
A1	16-19"	10yr 2/1	Silt Loam	(1)2,3 vf,(f),m,c,vc gr,pl,sbk,abk pr,cl,(m),st	(lo),vfr fr,fi vfi,efi	eo,(evsl) esl,estr ev	a,c,g,d s,w,i,b	0,1(2)3 vf,f m,(c)	25%	—	—
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RSS22 Project Name RICO

Location 12W. Edor St. Project Number CA47-05-01

Sample Number See below Tag Number See below

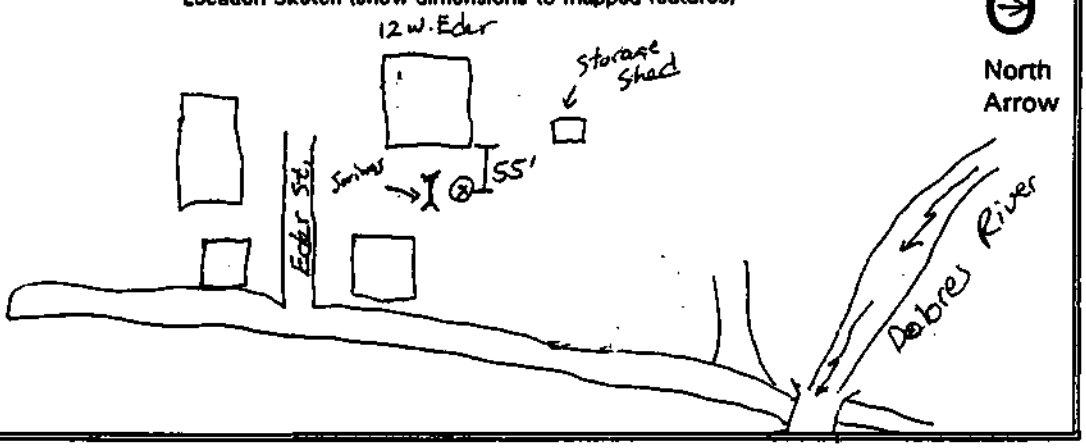
Date 5/25/95 Time See below Photographic Roll RICO 2 Number 21,22

Weather Conditions Cloudy, cold ~ 35°F

Ground Surface Conditions Disturbed lawn area

Sampler Name J. Carter Borden

Location Sketch (show dimensions to mapped features)



Depth Status | Unified Symbol

		Soil Description	Comments (color, odor, texture, mineralization, alteration)		
		Sample#	TAG #	TIME	Station
		0-2" S00026	77851	10:20	RSS22
		2-10" S00027	77852	10:25	RNS2201
		10-18" S00028	77853	10:30	RNS2211

PTI SOIL PROFILE DESCRIPTION

M. Maxwell

Area/Location: 12 W. Eder | Approx. Elevation: | Contract No.: CA47-05-01 | Legal Description:

Vegetation: Lawn | Slope: 3% | Date: 5/25/95 | T ___ R ___ Sec. ___

Parent Material: Alluvium | Aspect: N, NE, E, (SE) S, SW, W, NW | Moisture: dry to ___ moist to ___ sl. moist to 18" wet to ___ | Station No.: R4522

Physiography: Floodplain | Relief: (convex), concave, planar | % Coarse Frag: 75%

Current Land Use: Dist. Residential | Drainage: excessive, somewhat excessive, well, (moderately well), somewhat poorly, poorly, very poorly | Erosion Type: (sheet, rill,) gully, wind | Control Section Depth: 18"

Profile described by: BOYD

Additional Comments: Landowner says that area is all disturbed
- Fe pyrite observed
- Little alteration
- Some Iron oxides

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
C	0-18"	10yr 3/2	Gravelly Sandy Loam	(1),2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,sg	lo,vfr f,(fi) vfi,efi	(eo),evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,(2),3 (vf,f) m,c	45%	20%	10%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

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RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RSS23 Project Name RICO

Location Block 23 Lot 16-17 Project Number CA47-05-01

Sample Number See below Tag Number See below

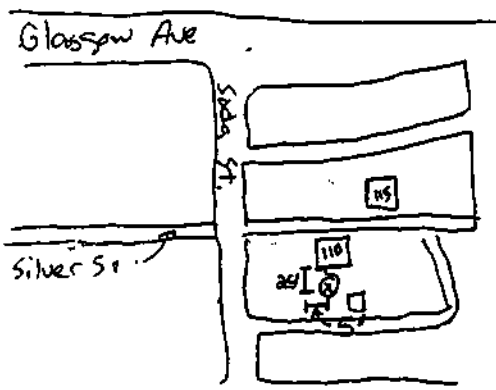
Date 5/26/95 Time See below Photographic Roll RICO 2 Number 23

Weather Conditions Mostly cloudy

Ground Surface Conditions Disturbed

Sampler Name Jeff Paul

Location Sketch (show dimensions to mapped features)



North Arrow

Depth Status | Unified Symbol

		Soil Description	Comments (color, odor, texture, mineralization, alteration)
		Station Sample # TAS # TIME	
		0-2" RSS23 500029 77854 11:00	
		2-10" RNS2301 500030 77855 11:05	
		10-18" RNS2311 500049 77875 11:10	

PTI SOIL PROFILE DESCRIPTION

Page ___ of ___

110 N. Silver St.

Area/Location: Block 23 Lots 16-17 | Approx. Elevation: _____ | Contract No.: CA47-05-01 | Legal Description:

Vegetation: Grass | Slope: 3% | Date: 5-25-95 | T_____ R_____ Sec._____

Parent Material: Colluvium | Aspect: N, NE, E, SE, S, (SW), W, NW | Moisture: dry to _____ moist to _____ sl. moist to 18" wet to _____ | Station No.: RSS 23

Physiography: Side Slope | Relief: convex, (concave), planar | % Coarse Frag: 35%

Current Land Use: Residential / Disturbed | Drainage: excessive, somewhat excessive, well, moderately well, (somewhat poorly), poorly, very poorly | Erosion Type: (sheet), (rill), gully, wind | Control Section Depth: 20"

Profile described by: BOYD

Additional Comments: Site is downslope ≈150' from waste piles & old head frame

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
Dist. A	0-18"	10yr 2/1	Silt Loam	(1),2,3 (vf),f,m,c,vc gr,pl,(sbk),abk pr,cl,m,sg	lo,vfr (fr),fi vfi,efi	(eo),evsl esl,estr ev	a,c,g,d s,w,i,b	0,(1),2,3 (vf),f m,c 0-6" dense >6"=0	20%	5%	10%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

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RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RSS24 Project Name RICO

Location 115 N. Silver St. Project Number CA47-05-01

Sample Number See below Tag Number See below

Date 5/25/95 Time See below Photographic Roll RICO 2 Number 24, 25

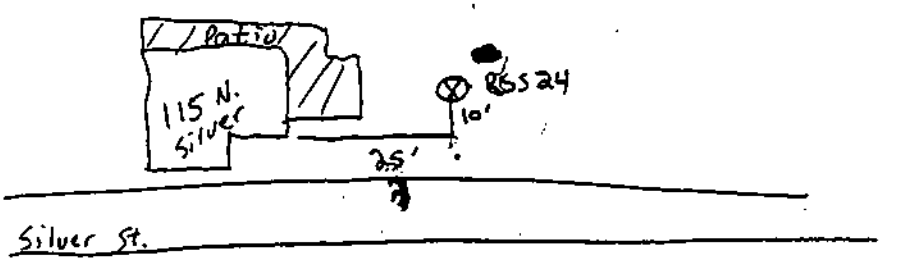
Weather Conditions Snow, cold – 35°F

Ground Surface Conditions landscaped yard (disturbed)

Sampler Name Jeff Paul

Location Sketch (show dimensions to mapped features)

North Arrow



Depth Status | Unified Symbol

		Soil Description	Comments (color, odor, texture, mineralization, alteration)
		Depth Station Sample # TAG # Time	
		0-2" RSS24 S00050 77886 11:30	
		2-10" RNS2401 S00051 77877 11:35	
		10-18" RNS2411 S00052 77878 11:40	

PTI SOIL PROFILE DESCRIPTION

Page ___ of ___

Area/Location: 115N-Silver | Approx. Elevation: ___ | Contract No.: CA47-05-9 | Legal Description:

Vegetation: Landscaped lawn | Slope: 3% | Date: 5-25-95 | T___ R___ Sec.___

Parent Material: Colluvium | Aspect: N, NE, E, SE, S, (SW), W, NW | Moisture: dry to ___ moist to ___ sl. moist to ~~6"~~ 18" wet to ~~30"~~ JCB 5/25/95 | Station No.: RSS24

Physiography: Side slope | Relief: convex, (concave), planar | % Coarse Frag: 70%

Current Land Use: Disturbed Residential | Drainage: excessive, somewhat excessive, well, moderately well, (somewhat poorly), poorly, very poorly | Erosion Type: sheet, rill, gully, wind | Control Section Depth: 18

Profile described by: BoyP

Additional Comments: Area is downslope 200' from head frame & waste piles. Landowner selected area along paths to be sampled inside garden. - Iron oxides & pyrite present

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-12	10yr 2/2	Sandy (Gravelly) Loam	(1),2,3 (vf),f,m,c,vc (gr),pl,sbk,abk pr,cl,m,sg	(lo),vfr fr,fi vfi,efi	(eo),evsl esl,estr ev	a,c,g,d s,w,(i),b	~~0~~,~~1~~,~~2~~,3 vf,f (m),c	50%	15%	5%
A1	12-18'	5yr 4/2	Gravelly Loamy Sand	(1),2,3 (vf),f,m,c,vc (gr),pl,sbk,abk pr,cl,m,st	(lo),vfr fr,fi vfi,efi	(eo),evsl esl,estr ev	a,c,g,d s,w,i,b	0,(1),2,3 vf,f (m),c	50%	10%	—
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

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RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RSS25 Project Name RICO

Location Rohde Inn Project Number CA47-05-01

Sample Number See Below Tag Number See below

Date 5/25/95 Time See below Photographic Roll RICO2 Number 24,25

Weather Conditions Snow/rain, cold ~ 35°F

Ground Surface Conditions Disturbed area w/ lots of construction debris

Sampler Name J. Carter Borden

Location Sketch (show dimensions to mapped features)

Depth | Status | Unified Symbol

		Soil Description		Comments (color, odor, texture, mineralization, alteration)		
		Depth	Sample#	Stn	TAG	Time
		0-2"	500053	RSS25	77879	13:05
		0-2"(dup)	500056	RSS25	77882	13:05
		2-10"	500054	RNS2501	77880	13:10
		10-18"	500055	RNS2511	77881	13:15
			MB ~~500056~~ 5/25/95			

PTI SOIL PROFILE DESCRIPTION

Area/Location: 205 S. Glasgow Rohde Inn | Approx. Elevation: | Contract No.: CA47-05-01 | Legal Description:

Vegetation: Grasses | Slope: 0-2% | Date: 5/25/05 | T ____ R ____ Sec. ____

Parent Material: Colluvium | Aspect: N, NE, E, SE, S, (SW), W, NW | Moisture: dry to ____ moist to 20" sl. moist to ____ wet to ____ | Station No.: RSS as

Physiography: Bench above river | Relief: convex, (concave), planar | % Coarse Frag: 65"

Current Land Use: Commercial / Residential disturb | Drainage: excessive, somewhat excessive, well, moderately well, (somewhat poorly), poorly, very poorly | Erosion Type: (sheet), rill, gully, wind | Control Section Depth: 20"

Profile described by: B.Y.P

Additional Comments: Const. debris abundant - Fill material w/ const. debris (wood & glass)
- No mineralization
- No pyrite observed

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-20"	10yr 3/4	Gravelly Silt Loam	(1),2,3 vf,f,m,c,vc gr,pl,(sbk),abk pr,cl,m,sg	(lo),vfr fr,fi vfi,efi	(eo),evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,(2),3 (vf,f) m,c	35%	20%	10%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RSS26 Project Name RICO

Location Block 7 Lots 16-20 (behind Rico Motel) Project Number CA47-05-01

Sample Number See below Tag Number See below

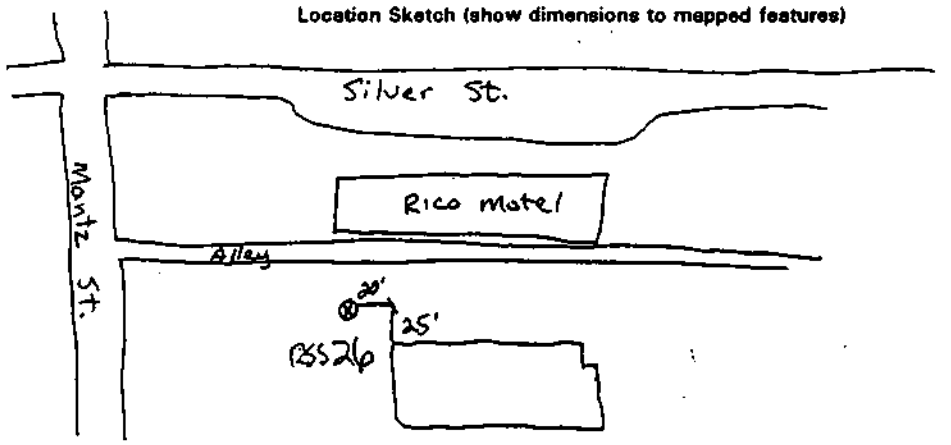
Date 5/25/95 Time See below Photographic Roll RICO2 Number 26,27

Weather Conditions Rainy, cold ~ 35°F

Ground Surface Conditions

Sampler Name J. Carter Bordon

Location Sketch (show dimensions to mapped features)



North Arrow

Depth Status | Unified Symbol

		Soil Description	Comments (color, odor, texture, mineralization, alteration)
		Stn Sample # TAG #	Time Depth
		RSS26 500057 77883	13:40 0-2"
		RSS2601 500058 77884	13:45 2-10"
		RSS2611 500059 77885	13:47 10-18"

PTI SOIL PROFILE DESCRIPTION

Area/Location: Block 7 Lots 16-20 Approx. Elevation: _____ Contract No.: CA47-05-01 Legal Description:

Vegetation: Grasses Slope: 2% Date: 5-25-95 T ___ R ___ Sec. ___

Parent Material: Colluvium Aspect: N, NE, E, SE, S, (SW) W, NW Moisture: dry to 0 moist to 20' Station No.: RSS216

Physiography: Side slope Relief: convex, concave, (planar) sl. moist to ___ wet to ___ % Coarse Frag: 25%

Current Land Use: Dist. residential Drainage: excessive, somewhat excessive well, moderately well, (somewhat poorly) poorly, very poorly Erosion Type: sheet, rill, gully, wind Control Section Depth: 20"

Profile described by: Boyd

Additional Comments: Material is possibly Fill - Contains glass and brick frags. Surface material contains charcoal

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0"-20"	10yr 2/1	Sandy Loam	(1)2,3 vf,(f),m,c,vc (gr),pl,sbk,abk pr,cl,m,sg	lo,vfr (fr),fi vfi,efi	eo,evsl esl,(estr) ev	(a),c,g,d s,w,i,b	0,1,(2),3 vf,(f) m,c	~20%	<5%	∅
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RSS 27 Project Name RICO.

Location Block 14 - Lots 21-28 Project Number CA47-05-01

Sample Number See below Tag Number See Below

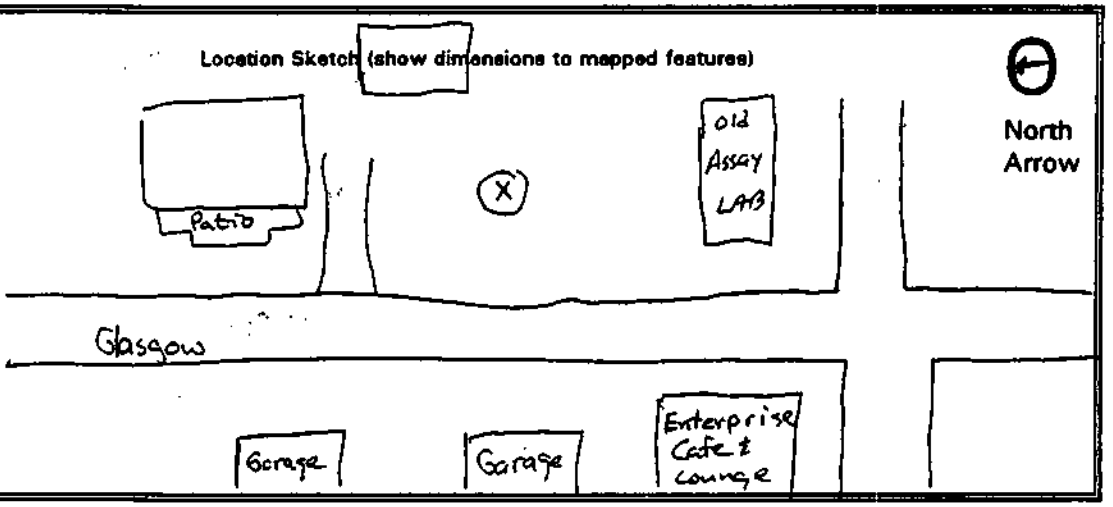
Date 5/25/95 Time See below Photographic Roll RICO 2 / RICO 3 Number 28/1

Weather Conditions Hard rain, windy ~35°F

Ground Surface Conditions Disturbed residential

Sampler Name J. Carter Borden

Location Sketch (show dimensions to mapped features)



Depth Status | Unified Symbol

		Soil Description	Comments (color, odor, texture, mineralization, alteration)
		SAMPLES	
		Stn Sample # TAG #	TIME Depth
		RSS27 500060 77886	14:15 0-2"
		RSS2701 500061 77887	14:20 2-10"
		RSS2711 500062 77888	14:20 10-18"

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PTI SOIL PROFILE DESCRIPTION

Area/Location: Block 14, Lots 21-28 | Approx. Elevation: _____ | Contract No.: CA47-05-01 | Legal Description:

Vegetation: Grasses | Slope: 2% | Date: 5/25/95 | T _____ R _____ Sec. _____

Parent Material: Colluvium | Aspect: N, NE, E, SE, S, SW (W) NW | Moisture: dry to _____ moist to 20" sl. moist to ____ wet to _____ | Station No.: RS527

Physiography: Bench above river | Relief: (convex) concave, planar | % Coarse Frag: 35%

Current Land Use: Residential | Drainage: excessive, somewhat excessive, well, moderately well, (somewhat poorly), poorly, very poorly | Erosion Type: (sheet, rill,) gully, wind | Control Section Depth: 20"

Profile described by: BOYP

Additional Comments: Area is heavily dist.
- No mine waste or mineralization observed
- Little Fe pyrite & iron oxides observed

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-20"	10yr 3/2	Gravelly Sandy Loam	(1),2,3 (vf),f,m,c,vc gr,pl,(sbk),abk pr,cl,m,sg	(lo),vfr fr,fi vfi,efi	(eo),evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,(2),3 (vf,f) m,c	60%	5%	10%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

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RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RSS28 Project Name RICO

Location Louis M. Jones Park Project Number CA470501

Sample Number See below Tag Number See below

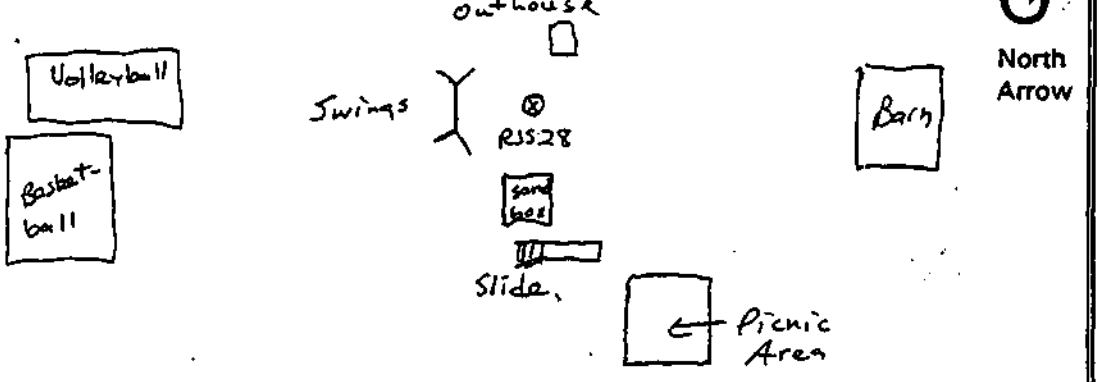
Date 5/25/95 Time See below Photographic Roll RICO 3 25 EXP 200 ASA Number 2, 3

Weather Conditions Mostly cloudy ~ 35°F

Ground Surface Conditions Grass covered hill

Sampler Name Jeff Paul

Location Sketch (show dimensions to mapped features)



Depth Status | Unified Symbol

		Soil Description	Comments (color, odor, texture, mineralization, alteration)
		STN Sample # TAG# TIME	
		RSS28 500063 77889 14:55	
		RNS2801 500064 77890 15:00	
		RNS2811 500065 77891 15:05	

PTI SOIL PROFILE DESCRIPTION

Area/Location: Louis M. Jones Park
Approx. Elevation: _____
Contract No.: CA47-05-01
Legal Description:

Vegetation: Fitt Grass
Slope: 2%
Date: 6/25/95
T ___ R ___ Sec. ___

Parent Material: Fill / "A"
Aspect: N, NE, E, SE, S, (SW), W, NW
Moisture: dry to ___ moist to ___ sl. moist to 1½" wet to ___
Station No.: RSS 28

Physiography: Bench above river
Relief: convex, (concave), planar
% Coarse Frag: 40%

Current Land Use: City Park
Drainage: excessive, somewhat excessive, well, moderately well, (somewhat poorly) poorly, very poorly
Erosion Type: (sheet, rill,) gully, wind
Control Section Depth: 18"

Profile described by: Boyd

Additional Comments: Fill material on top of A horizon
- Large rock frags in "A" horizon exhibit
- No Fe pyrite
- Irons oxides observed
- Epidote alt.
- No mineralization
- No mine works

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
FILL	0-10"	10yr 3/3	Gravelly Sandy Loam	(1)2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,sg	lo,vfr fr,(fi) vfi,efi	~~eo~~,evsl esl,estr ev	a,(c),g,d s,(w),b	0,1,(1),3 (vf,f) m,c	5%	25%	0% 10%
Buried A	10-18"	10yr 2/2	Gravelly Silty Loam	(1),2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,(vfr) fr,fi vfi,efi	(eo),evsl esl,estr ev	a,c,g,d s,w,i,b	0,(1),2,3 vf,f (m,c)	30%	10%	5%
			w brick material	1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

Amy & David Berry CaC ?/5/95

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID ~~500067~~ RSS29 (JCB 5/25/95) Project Name Rico

Location ~~Alan F. + K. Therese Kornbluth~~ Project Number CA47-0501

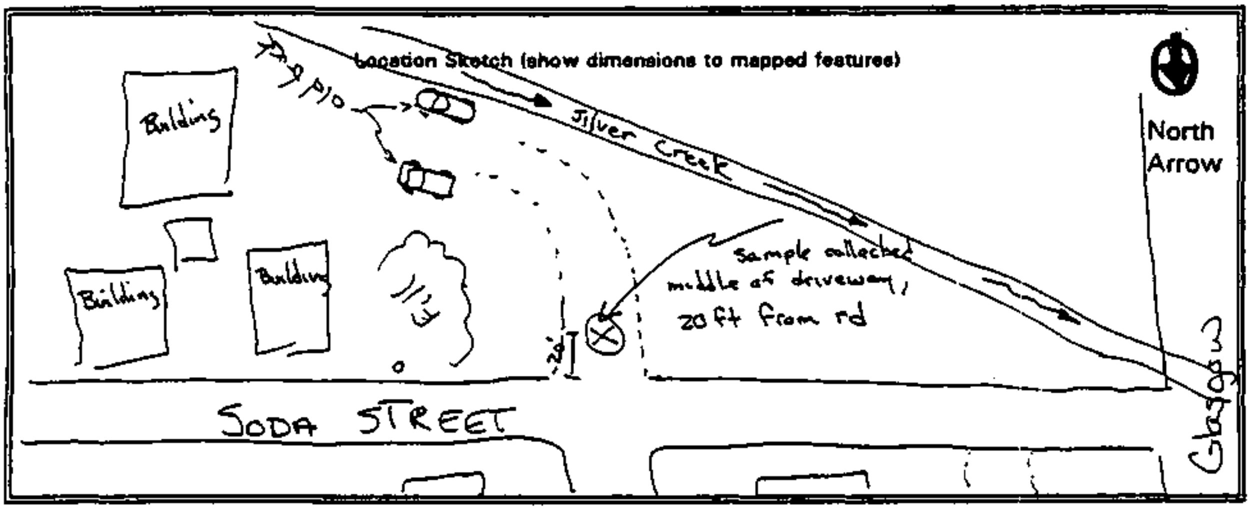
Sample Number 500067 Tag Number 77893

Date 5/25/95 Time 15:25 Photographic Roll Rico 3 Number 4, 5

Weather Conditions Rainy/snowy 35°

Ground Surface Conditions Moist

Sampler Name Jeff Paul



Depth Status
Unified Symbol

Depth Status	Unified Symbol	Soil Description	Comments (color, odor, texture, mineralization, alteration)
		on back	

PTI SOIL PROFILE DESCRIPTION

Area/Location: (7,14) Alan F & Theresa Kornblih Approx. Elevation: _____ Contract No.: CA47-05-01 Legal Description:

Vegetation: none / yard Slope: 1% Date: 5/25/95 T_____ R_____ Sec._____

Parent Material: Fill Aspect: N, NE, E, SE, S, SW, (W) NW JCB 5/26/95 Moisture: dry to _____ moist to 6" sl. moist to _____ wet to _____ Station No.: RSS29

Physiography: Gentle driveway Relief: convex, concave, (planar) % Coarse Frag: 90%-80%

Current Land Use: Driveway/yard Drainage: excessive, somewhat excessive well, moderately well, (somewhat poorly), poorly, very poorly Erosion Type: (sheet), rill, gully, wind Control Section Depth: 0"-4"

Profile described by: J. Carter Borden

Additional Comments: Defined layer of fill by composition Top layer gravel fill w/ ss, sh, sts, qtz monzonites & other igneous rks. About 1.75-1.50" down changes to a grey layer, ladden w/ sulfide ash rks. Sulfides are to be galena & pyrite. Area is a doveway using fill material. Disturbed earth to the east 10' upslope.

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
Fill Type I JCB 5/25/95	0"-1.5"	10YR 4/3	Gravelly sandy loam	(1)2,3 (vf),f,m,c,vc gr,pl,sbk,abk pr,cl,m,sg	(lo),vfr fr,fi vfi,efi	eo,evsl esl,estr (ev)	a,c,(g),d s,w,i,b	(0),1,2,3 vf,f m,c	80% 70% JCB 5/26/95	20%	—
Fill Type II	1.5"-4"	5Y/ 4/1	Gravelly Sandy loam	(1)2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	(lo),vfr fr,fi vfi,efi	(eo),evsl esl,estr ev	a,c,(g),d s,w,i,b	(0),1,2,3 vf,f m,c	80%	—	—
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RSS30 (ICO 6/8/95) Project Name Rico

Location A #17 Project Number CA47-05-01

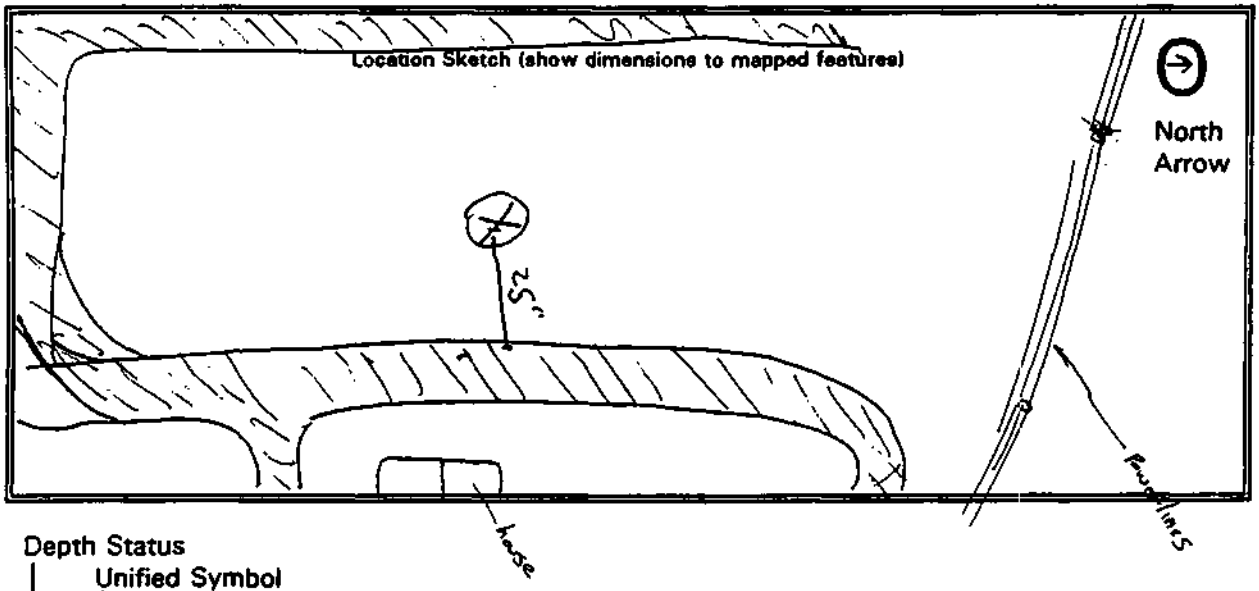
Sample Number SO00668 Tag Number 77894

Date 5/25/95 Time 15:55 Photographic Roll Rico 3 Number 6

Weather Conditions Rainy/snowy 35°F

Ground Surface Conditions Moist

Sampler Name Jeff Paul



Depth	Status	Unified Symbol	Soil Description	Comments (color, odor, texture, mineralization, alteration)
			on back	

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PTI SOIL PROFILE DESCRIPTION

Area/Location: 8,17 | Approx. Elevation: | Contract No.: | Legal Description:

Vegetation: Grass | Slope: 1% | Date: 5/25/95 | T R Sec.

Parent Material: Fill | Aspect: N, NE, E, SE, S, (SW), W, NW | Moisture: dry to 0" moist to 6" sl. moist to wet to | Station No.: RS530

Physiography: Terraced slope | Relief: (convex), concave, planar | % Coarse Frag: ~16%

Current Land Use: None | Drainage: excessive, somewhat excessive well, (moderately well), somewhat poorly, poorly, very poorly | Erosion Type: (sheet), rill, gully, wind | Control Section Depth: 0"-6"

Profile described by: JCB

Additional Comments: Filled terraced area, Road gravel washing down from ROAD above

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
Fill	0-6"	10YR 3/2	silt loam	(1),2,3 (vf),f,m,c,vc gr,pl,(sbk),abk pr,cl,m,sg	(lo),vfr fr,fi vfi,efi	eo,evsl esl,estr (ev)	(a)c,g,d s,w,i,b	0,1,(2),3 (vf),f m,c	<1%	5%	10%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RS531 Project Name Rico

Location 9,16 Project Number CA47-0501

Sample Number 500069 Tag Number 77895

Date 5/25/95 Time 16:30 Photographic Roll Rico 3 Number 7

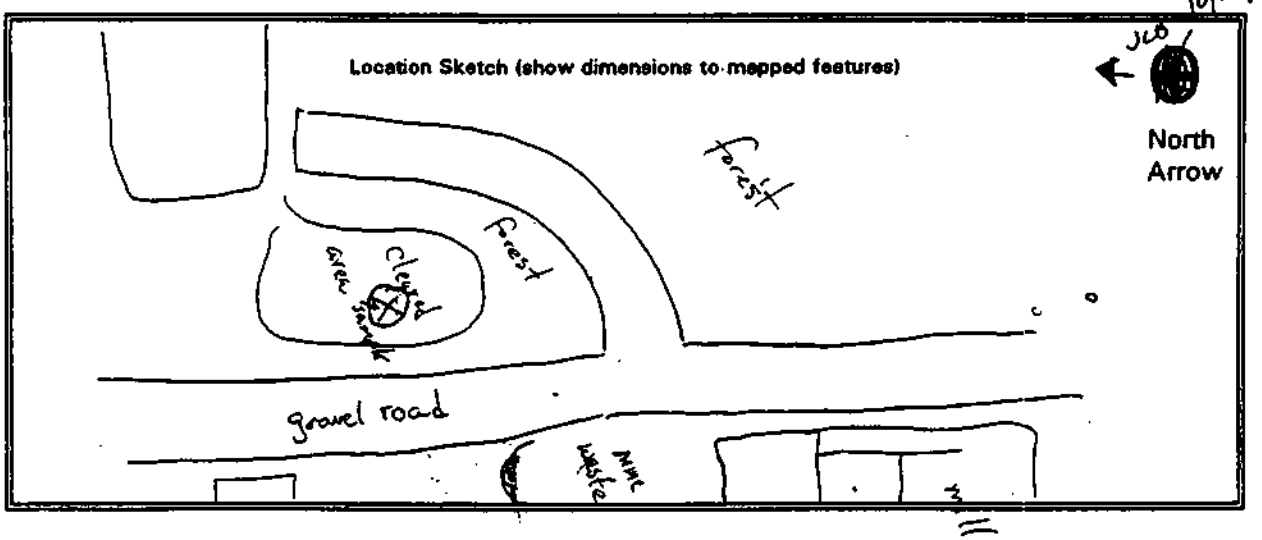
Weather Conditions Rainy / 35°F

Ground Surface Conditions Moist

Sampler Name Jeff Paul

10/23/95

Location Sketch (show dimensions to mapped features)



Depth	Status	Unified Symbol	Soil Description	Comments (color, odor, texture, mineralization, alteration)
			on back	

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PTI SOIL PROFILE DESCRIPTION

Area/Location: 9/16 Robert & Lorrie Matthews Alley

Approx. Elevation: ____

Contract No.: ____

Legal Description:

Vegetation: Aspen Forest

Slope: 0-2%

Date: 5-25-95

T ____ R ____ Sec. ____

Parent Material: Colluvium

Aspect: N, NE, E, SE, S, SW, (W), NW

Moisture: dry to ____ moist to 6" sl. moist to ____ wet to ____

Station No.: RS531

Physiography: Gentle slope heavily dist.

Relief: (convex) ~~(concave)~~ planar JCB

% Coarse Frag: 70%

Current Land Use: Residential

Drainage: excessive, somewhat excessive well, (moderately well,) somewhat poorly, poorly, very poorly

Erosion Type: (sheet) rill, gully, wind

Control Section Depth: 0"-6"

Profile described by: J. Carter Borden

Additional Comments: Sample collected in clearing for buildings. Soil is heavily disturbed & graded. Accross the street there lies a mill. Underlying layer in street is mine waste.

Pyrite present

Alteration: Epidote chlorite

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
Fill	0-6"	gravelly silt loam	10YR 3/3	(1),2,3 vf,f,m,c,vc gr,(pl),sbk,abk pr,cl,m,sg	lo,vfr (fr),fi vfi,efi	(eo),(evsl) esl,estr ev	~~a,c,g,d s,w,i,b~~	(0),1,2,3 vf,f m,c	50%	15%	5%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID R5532 Project Name Rico Mine

Location Van Winkle Mine (9,16) Project Number CA470501-

Sample Number 50907 Tag Number 77896

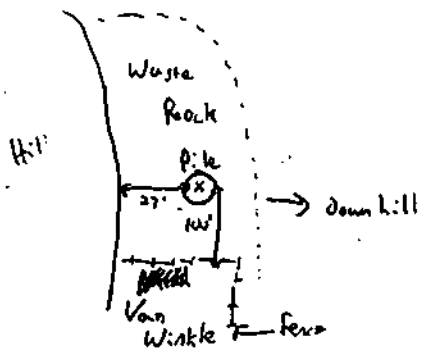
Date 14:41 Time 5/30 Photographic Roll Rico 3 Number 8

Weather Conditions cloudy, sporadic rain

Ground Surface Conditions damp

Sampler Name Borden

Location Sketch (show dimensions to mapped features)



Depth Status | Unified Symbol

		Soil Description	Comments (color, odor, texture, mineralization, alteration)
		on back	

PTI SOIL PROFILE DESCRIPTION

Area/Location: VanWinkle Mine (9, 16) Approx. Elevation: _____ Contract No.: _____ Legal Description:

Vegetation: Barren Slope: 0% Date: 5/30/95 T____ R____ Sec.____

Parent Material: Waste Rock Aspect: N, NE, E, SE, S, SW, W, NW Moisture: dry to _____ moist to _____ sl. moist to 22" wet to _____ Station No.: RSS 32

Physiography: Hillside Relief: convex, concave, (planar) % Coarse Frag: 80%

Current Land Use: Old Mine Waste Rock Area Van Winkle Mine Drainage: excessive, somewhat excessive, (well), moderately well, somewhat poorly, poorly, very poorly Erosion Type: (sheet), rill, gully, wind Control Section Depth: 0-2"

Profile described by: Writer / Burden

Additional Comments: Waste rock pile, pyrite, galena

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-2"	10 yr 5/2	Sand	(1),2,3 (vf),f,m,c,vc gr,pl,(sbk),abk pr,cl,m,sg	(lo),vfr fr,fi vfi,efi	eo,(evsl) esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c	70%	5%	5%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

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RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RSS 3 3 Project Name Rico

Location 9,13 Project Number CA470501

Sample Number 500071 Tag Number 77897

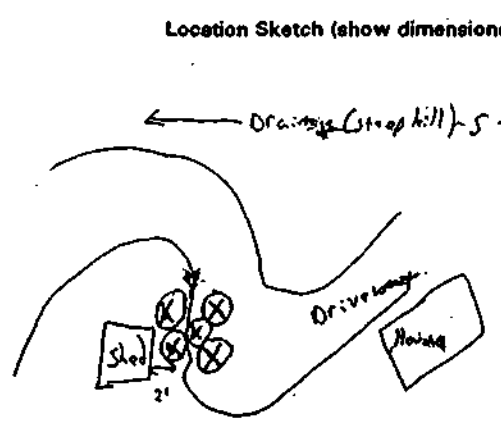
Date 5/30/95 Time 1512 Photographic Roll Rico 3 Number 9

Weather Conditions rainy / snow

Ground Surface Conditions wet / muddy

Sampler Name Burden

Location Sketch (show dimensions to mapped features)



North Arrow

Depth Status | Unified Symbol

		Soil Description	Comments (color, odor, texture, mineralization, alteration)

PTI SOIL PROFILE DESCRIPTION

Area/Location: NW residential | Approx. Elevation: _____ | Contract No.: CA470501 | Legal Description:

Vegetation: Sparse grass | Slope: 2 % | Date: 5/30 | T _____ R _____ Sec. _____

Parent Material: Gravel/Debris/colluvium | Aspect: N, NE, E, SE, S, SW, W, NW | Moisture: dry to _____ moist to 2" - sl. moist to _____ wet to _____ | Station No.: RSS33

Physiography: hillside / disturbed | Relief: (convex), concave, planar | % Coarse Frag: 85%

Current Land Use: residential | Drainage: excessive, somewhat excessive, (well) moderately well, somewhat poorly, poorly, very poorly | Erosion Type: (sheet) rill, gully, wind | Control Section Depth: 0-2"

Profile described by: Writer / Borden

Additional Comments: Partially in road / driveway to residence

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-2"	10YR 3/3	Gravelly sandy loam	(1),2,3 vf(f)m,c,vc gr,pl,sbk,abk pr,cl,m,sg	(lo),vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,(1),2,3 vf(f) m,c	70	10%	5%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RSS34 Project Name Rico

Location 9,13 Project Number CA470601

Sample Number ~~RSS43~~ 500072 Tag Number 77898

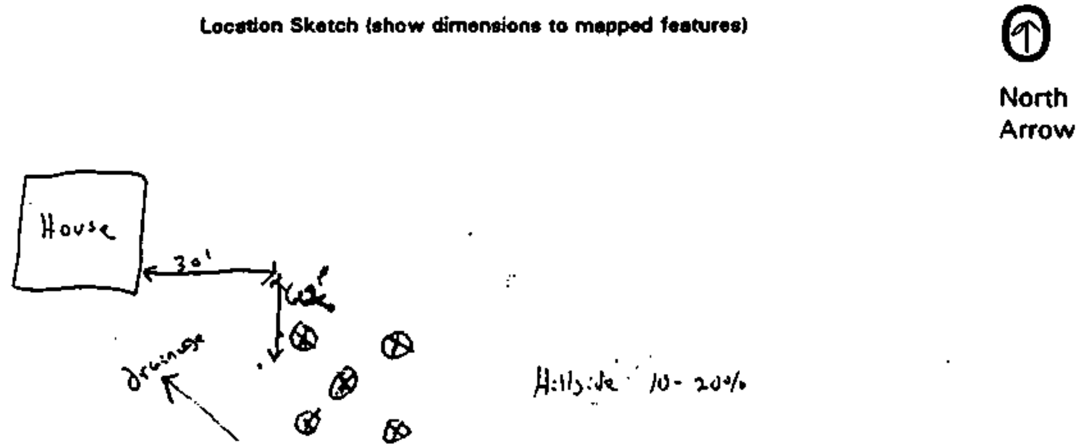
Date 5/30/95 Time 1530 Photographic Roll Rico 3 Number 9

Weather Conditions rainy/showers

Ground Surface Conditions wet

Sampler Name Borden

Location Sketch (show dimensions to mapped features)



Depth Status
Unified Symbol

		Soil Description	Comments (color, odor, texture, mineralization, alteration)
		ON Back.	

PTI SOIL PROFILE DESCRIPTION

Area/Location: Hillside above residence Approx. Elevation: _____ Contract No.: CA470501 Legal Description:

Vegetation: Native Grass Slope: 10% Date: 5/30/95 T _____ R _____ Sec. _____

Parent Material: Sandy Loam Aspect: N, NE, E, SE, S, SW, W, NW Moisture: dry to _____ moist to _____ sl. moist to _____ wet to 0-2" Station No.: RSS 34

Physiography: Hillside Relief: convex, (concave), planar % Coarse Frag: 25

Current Land Use: Residential Drainage: excessive, somewhat excessive (well) moderately well, somewhat poorly, poorly, very poorly Erosion Type: (sheet) rill, gully, wind Control Section Depth: 0-2"

Profile described by: Writer JBurden

Additional Comments: native material, no mineralization, some mica

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-2	10YR 2/1	Sandy Loam	(0),1,2,3 vf,f,m,c,vc gr,pl,(sbk),abk pr,cl,m,sg	(lo),vfr (fr),fi vfi,efi	eo,(evs) esl,estr ev	a,c,g,d s,w,i,b	0,1,(2),3 vf,f m,c	10-15	10	5
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

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RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RS535 Project Name Rico

Location 3,6 Project Number CA470501

Sample Number 50073 Tag Number 77899

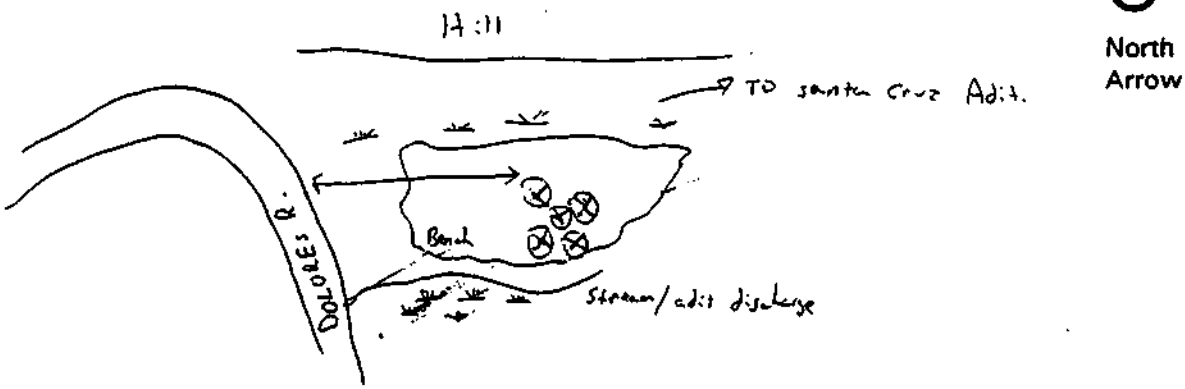
Date 5/30/95 Time 10:30 Photographic Roll Rico 3 Number 11 & 12 & 13

Weather Conditions cloudy

Ground Surface Conditions grass 50% barren soil 50%

Sampler Name Borden/Writer

Location Sketch (show dimensions to mapped features)



Depth Status | Unified Symbol

		Soil Description	Comments (color, odor, texture, mineralization, alteration)
		ON Back.	

PTI SOIL PROFILE DESCRIPTION

Area/Location: 3,6 | Approx. Elevation: | Contract No.: CA470501 | Legal Description:

Vegetation: willows / grass / berries | Slope: 0% | Date: 5/30/95 | T ____ R ____ Sec. ____

Parent Material: Sandy Loam | Aspect: N, NE, E, SE, S, SW, W, NW | Moisture: dry to ____ moist to ____ sl. moist to 2" wet to ____ | Station No.: RSS35 50+73

Physiography: Wetlands | Relief: convex, concave, (planar) | % Coarse Frag: 15%

Current Land Use: Wetlands | Drainage: excessive, somewhat excessive well, moderately well, somewhat poorly, poorly, very poorly | Erosion Type: sheet, rill, gully, wind | Control Section Depth: 0-2"

Profile described by: Writer/Burden

Additional Comments: Bench above wetlands area down from Santa Cruz adit

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-2"	10YR 3/2	sandy loam	(1),2,3 vf,(f),m,c,vc gr,pl,sbk,abk pr,cl,m,sg	(lo),vfr fr,fi vfi,efi	(eo),evsl esl,estr ev	a,c,~~g~~,d s,~~w~~,i,b	0,1,(2),3 vf,f m,c	5%	5%	5%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

misc\soilprof.frm

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RSS36 Project Name Rico

Location Sue Ellison (7,13) Project Number CA470501

Sample Number 500074 Tag Number 77900

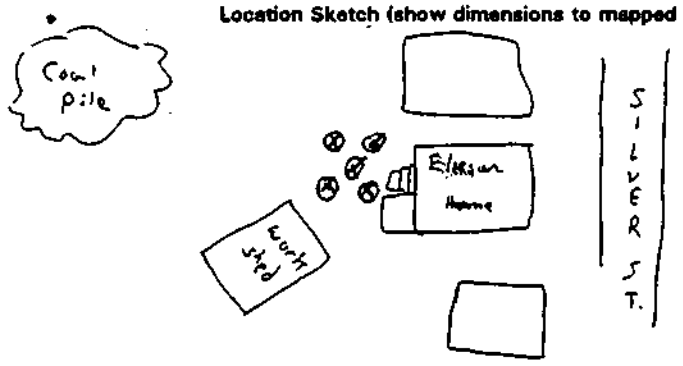
Date 5/30/95 Time 10:50 Photographic Roll Rico 3 Number 14

Weather Conditions cloudy

Ground Surface Conditions wet; 50% grass, 50% bare soil

Sampler Name Burden / Writer

Location Sketch (show dimensions to mapped features)



North Arrow

Depth Status | Unified Symbol

		Soil Description	Comments (color, odor, texture, mineralization, alteration)
		ON BACK	

CA470501\SoilSamp.Frm

PTI SOIL PROFILE DESCRIPTION

Area/Location: Sue Ellison 7,13 | Approx. Elevation: _____ | Contract No.: CA470501 | Legal Description:

Vegetation: 50% grass / 50% Bare | Slope: 0-2% | Date: 5/30/95 | T _____ R _____ Sec. _____

Parent Material: Colluvium | Aspect: N, NE, E, SE, S, SW, W, NW | Moisture: dry to _____ moist to _____ sl. moist to 2" wet to _____ | Station No.: RS536

Physiography: Disturbed Native | Relief: convex, (concave), planar | % Coarse Frag: 30%

Current Land Use: Residential | Drainage: excessive, somewhat excessive well, moderately well, somewhat poorly, poorly, very poorly | Erosion Type: (sheet) rill, gully, wind | Control Section Depth: 0-2"

Profile described by: Writer / Borden

Additional Comments: Partially bare area behind back entrance; no evidence of mineralization / waste rock.

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-2"	10YR 2/2	Sandy Loam	(1)2,3 vf,f,m,c,vc gr,pl,(sbk),abk pr,cl,m,sg	(lo),vfr fr,fi vfi,efi	eo,(evsl) esl,estr ev	a,c,g,d s,w,i,b	0,1,(2),3 vf,f m,c	20%	5%	5%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

misc\soilprof.frm

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RSS 37, RNS 3701, ~~RNS 3702~~ RNS3711 Project Name Rico

Location Eric Heil (T4) Project Number CA470501

Sample Number [redacted] S0075-77 Tag Number 77904 - 77906

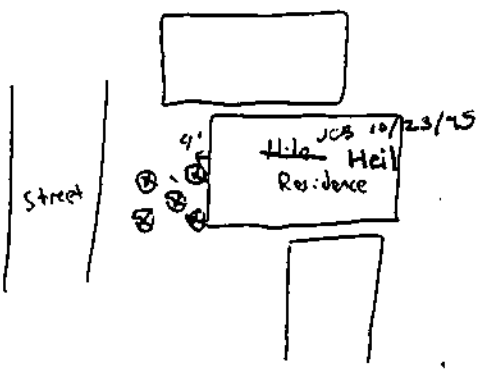
Date 5/30 Time 17:50 Photographic Roll Rico 3 Number 15

Weather Conditions rain

Ground Surface Conditions wet

Sampler Name Borden / Writer

Location Sketch (show dimensions to mapped features)



Depth	Status	Unified Symbol	Soil Description	Comments (color, odor, texture, mineralization, alteration)
			ON BACK	

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PTI SOIL PROFILE DESCRIPTION

Area/Location: T4

Approx. Elevation:

Contract No.: CA 170501

Legal Description:

Vegetation: 60% grass / 40% Bare

Slope: 0-2%

Date: 5/30/95

T____ R____ Sec.____

Parent Material: Disturbed Earth / Colluvium

Aspect: N, NE, E, SE, S, SW, W, NW

Moisture: dry to ____ moist to 18" - sl. moist to ____ wet to ____

Station No.: RS537, RN537W1, RN537E

Physiography: Disturbed

Relief: (convex) concave, planar

% Coarse Frag: 55%

Current Land Use: Residential

Drainage: excessive, somewhat excessive (well), moderately well, somewhat poorly, poorly, very poorly

Erosion Type: (sheet), rill, gully, wind

Control Section Depth: 0-18"

Profile described by: Writer / Burden

Additional Comments: Yard in front of Hile residence / 60% grass, 40% Bare, near B-8 pit
Deep sample: consistent horizon to 18", some coal, some fill (brick) no indication of mineralization.
Disturbed soils

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-18"	10YR 2/1	Gravelly Sandy Loam	(1),2,3 vf,(f),m,c,vc gr,pl,sbk,abk pr,cl,m,sg	(lo),vfr (fr)fi vfi,efi	eo,evsl (esl),estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c	30	15%	10%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RS538 Project Name Rico

Location Vacant Residential Lot Project Number CA470501

Sample Number 500078 Tag Number 77967

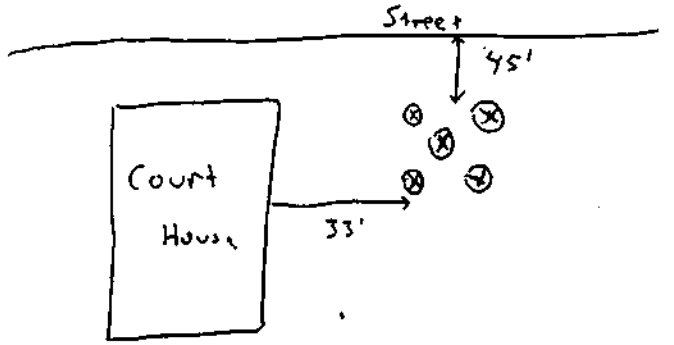
Date 5/31 Time 941 Photographic Roll Rico 3 Number 15

Weather Conditions sunny

Ground Surface Conditions moist, bare, 20% grass

Sampler Name Borden / Writer

Location Sketch (show dimensions to mapped features)



North Arrow

Depth | Status | Unified Symbol

		Soil Description	Comments (color, odor, texture, mineralization, alteration)
		ON Back	

PTI SOIL PROFILE DESCRIPTION

Area/Location: Patricia Engel 7,14 | Approx. Elevation: _____ | Contract No.: CA470501 | Legal Description:

Vegetation: Bare soil (20% straw) | Slope: 0% - 1% | Date: 5/31/95 | T_____ R_____ Sec._____

Parent Material: Fill & some native | Aspect: N, NE, E, SE, S, SW, W, NW | Moisture: dry to _____ moist to _____ sl. moist to 2" wet to _____ | Station No.: RS538

Physiography: Disturbed Earth, MW | Relief: convex, (concave), planar | % Coarse Frag: 45%

Current Land Use: Vacant lot Residential | Drainage: excessive, somewhat excessive (well) moderately well, somewhat poorly, poorly, very poorly | Erosion Type: (sheet), rill, gully, wind | Control Section Depth: 0-2"

Profile described by: Writer / Borden

Additional Comments: Vacant Lot N. of courthouse. Fill from waste rock, pyrite, coal

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-2"	10YR 4/2	Sandy Loam	(1)2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,sg	(lo)vfr fr,fi vfi,efi	eo,(evsl) esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c	30%	20%	5%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

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RICO SOIL SAMPLING FIELD DATA FORM

Sample ID _____ Project Name RICO

Location BK01 Project Number CA47-05-01

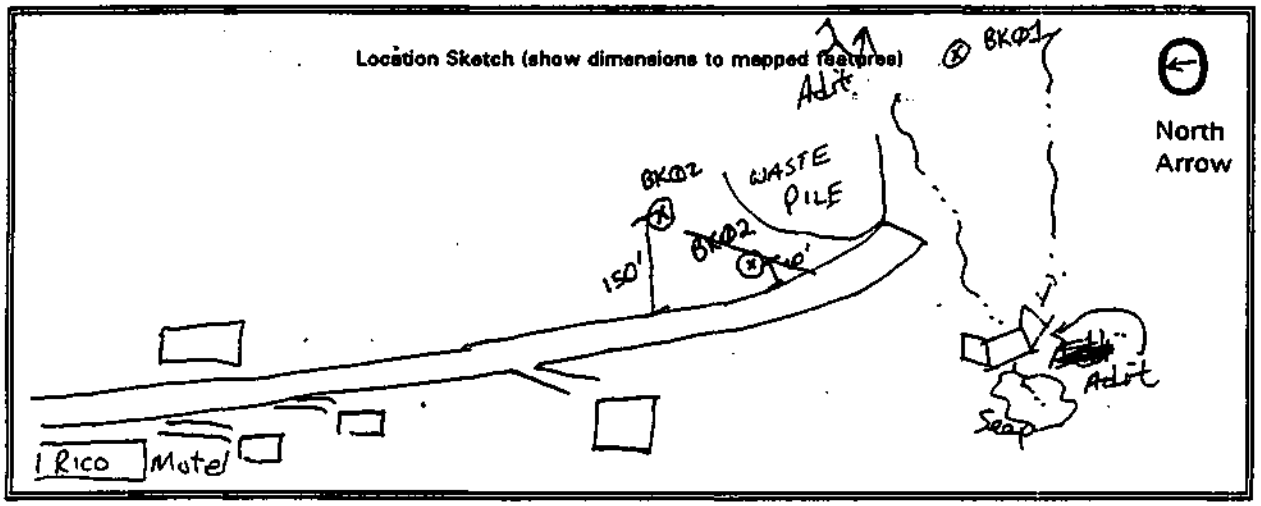
Sample Number 500033/500034 Tag Number 77858/77859

Date 5/23/95 Time 14:30 Photographic Roll RICO 1 Number 18

Weather Conditions Mostly cloudy, breezy ~50°F

Ground Surface Conditions Lots of organic litter (leaves) some grasses

Sampler Name Jeff Paul



Depth Status | Unified Symbol

		Soil Description	Comments (color, odor, texture, mineralization, alteration)
		ON-BACK	

PTI SOIL PROFILE DESCRIPTION

Page ___ of ___

Area/Location: _____ Approx. Elevation: _____ Contract No.: CA47-05-01 Legal Description:

Vegetation: Grass/Aspen/Pine Evergreens Slope: 10% Date: 5/23/95 T____ R____ Sec.____

Parent Material: Colluvium Aspect: N, NE, E, SE, S, SW, W, (NW) Moisture: dry to ____ moist to 6" Station No.: BK01

Physiography: Steep side slope Relief: (convex), concave, planar sl. moist to ____ wet to ____ % Coarse Frag: 25%

Current Land Use: Recreational Drainage: (excessive), somewhat excessive, well, moderately well, somewhat poorly, poorly, very poorly Erosion Type: sheet, (rill), gully, wind Control Section Depth: 6"

Profile described by: Boyd

Additional Comments: Parent material = Mostly siltstones and sandstones
Some wtx Fe pyrite, sma// amount of micas. Also Minor propolytic alteration (chlorite)
Area is non-disturbed side slope

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-6"	10yr 3/2	Silt Loam	(1),2,3 vf,(f),m,c,vc gr,pl,(sbk),abk pr,cl,m,sg	lo,vfr (fr),fi vfi,efi	(eo),evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,(2),3 (vf),f m,c	15%	5%	5%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

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RICO SOIL SAMPLING FIELD DATA FORM

Sample ID BK02 Project Name RICO

Location _____ Project Number CA47-05-01

Sample Number 500035 Tag Number 77860

Date 5/23/95 Time 14:45 Photographic Roll RICO1 Number 19

Weather Conditions Mostly cloudy, breezy ~ 50°F

Ground Surface Conditions _____

Sampler Name Jeff Paul

Location Sketch (show dimensions to mapped features)

North Arrow

See sketch for BK01

Depth Status | Unified Symbol

		Soil Description	Comments (color, odor, texture, mineralization, alteration)

PTI SOIL PROFILE DESCRIPTION

Area/Location: Side slope on E. side of Town Approx. Elevation: _____ Contract No.: CA47-05-01 Legal Description:

Vegetation: Pinegrass/aspen Slope: 5-6% Date: 5-23-95 T_____ R_____ Sec._____

Parent Material: Colluvium Aspect: N, NE, E, SE, S, (SW), W, NW Moisture: dry to _____ moist to 6" sl. moist to ___ wet to _____ Station No.: BK02

Physiography: Steep side slope Relief (convex) concave, planar % Coarse Frag: 25%

Current Land Use: Recreational/undisturbed. Drainage: excessive, somewhat excessive well, (moderately well), somewhat poorly, poorly, very poorly Erosion Type: sheet, (rill), gully, wind Control Section Depth: 6"

Profile described by: Boyd

Additional Comments: Parent material- pred. dirty arkosic sandstone, with siltstones. Little Fe pyrite some hematite staining. Areas of heavy mineralization observed w/in 50 ft of sample area. Few alterations (K-spar) noted

Area exhibited some mineralization. Sulfides are plenty

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-6"	10yr 4/4	Silt Loam	1,2,3 vf,(f),m,c,vc gr,(pl),sbk,abk pr,cl,m,sg	lo,(vfr) fr,fi vfi,efi	eo,(evsl) esl,estr ev	~~a,c,g,d~~ ~~s,w,i,b~~	0,1,2,(3) (vf,f) m,c	15%	5%	5%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

misc\soilprof.frm

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID BK03 Project Name RICO

Location _____ Project Number CA47-05-01

Sample Number 500036 Tag Number 77861

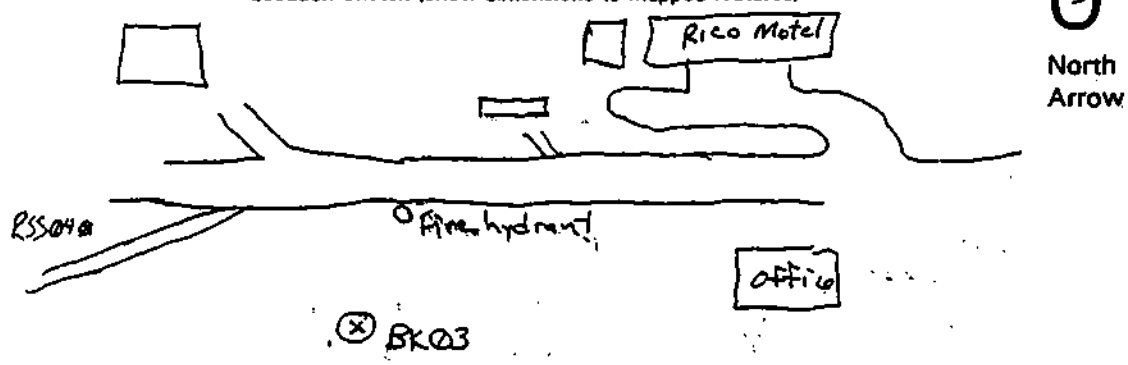
Date 5/23/95 Time 15:25 Photographic Roll RICO1 Number 20

Weather Conditions Mostly cloudy, breezy ~50°F

Ground Surface Conditions _____

Sampler Name Jeff Paul

Location Sketch (show dimensions to mapped features)



Depth Status | Unified Symbol

		Soil Description	Comments (color, odor, texture, mineralization, alteration)
		ON- BACK	

PTI SOIL PROFILE DESCRIPTION

Area/Location: _____ Approx. Elevation: _____ Contract No.: CA47-05-01 Legal Description:

Vegetation: Grasses / Mosses Slope: 2% Date: 5/23/95 T____ R____ Sec.____

Parent Material: Colluvium Aspect: N, NE, E, SE, S, (SW), W, NW Moisture: dry to ____ moist to 6" Station No.: BK03

Physiography: Side Slope Relief: convex, (concave), planar sl. moist to ____ wet to ____ % Coarse Frag: 10%

Current Land Use: None Drainage: excessive, somewhat excessive, well, moderately well, (somewhat poorly), poorly, very poorly Erosion Type: (sheet), rill, gully, wind Control Section Depth: 6"

Profile described by: Boyd

Additional Comments: No mineralization observed in area. Good organic litter on the surface. Parent material = dirty S.S. and siltstones. No pyrite or alteration observed in soil or surrounding floaters.

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-6"	10yr 2/1	Silt Loam	(1),2,3 vf,f,m,c,vc gr,pl,(sbk),abk pr,cl,m,sg	lo,vfr (fr,fi) vfi,efi	(eo),evsl esl,estr ev	a,c,g,d s,w,i,b	0,(1),2,3 (vf,) m,c	5%	5%	
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID SOØØ37 Project Name RICO

Location BKØ4 (upstream of mill) Project Number CA47-05-01

Sample Number SOØØ37 Tag Number 77862

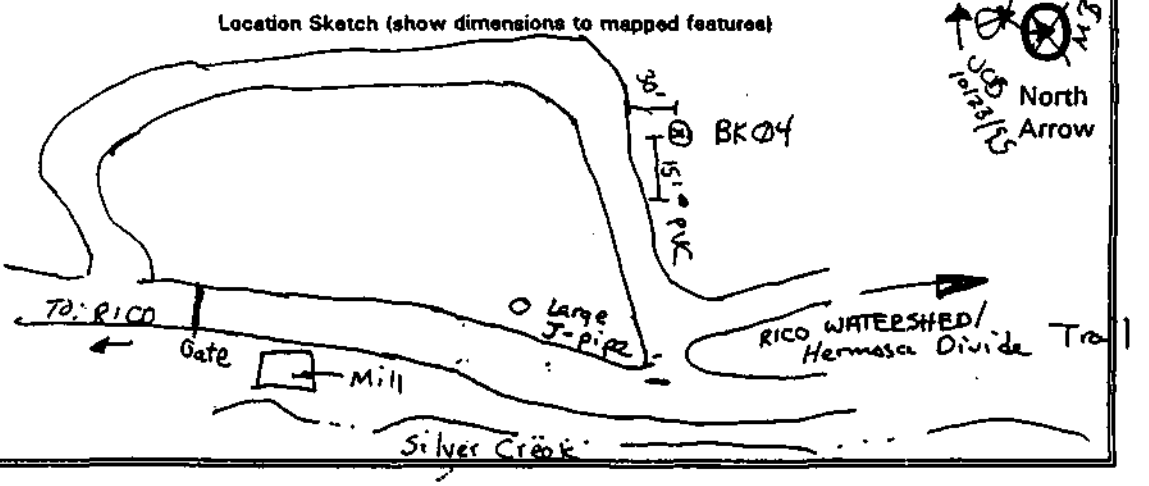
Date 5/23/95 Time 16:10 Photographic Roll RICO1 Number NA

Weather Conditions Mostly cloudy ~ 50°F

Ground Surface Conditions

Sampler Name Jeff Paul

Location Sketch (show dimensions to mapped features)



Depth Status | Unified Symbol

		Soil Description	Comments (color, odor, texture, mineralization, alteration)
		ON-BACK	

PTI SOIL PROFILE DESCRIPTION

Area/Location: _____ Approx. Elevation: _____ Contract No.: CA470501 Legal Description:

Vegetation: Grasses / Aspens Slope: 2% Date: 5/23/95 T____ R____ Sec.____ MB 5th 1995

Parent Material: Colluvium Aspect: N, NE, E, (SE), S, SW, W, NW Moisture: dry to _____ moist to _____ sl. moist to 6" wet to _____ Station No.: BK084

Physiography: Side slope Relief: (convex,) concave, planar % Coarse Frag: 30%

Current Land Use: None Drainage: excessive, somewhat excessive well, moderately well, (somewhat poorly) poorly, very poorly Erosion Type: sheet, (rill,) gully, wind Control Section Depth: 6"

Profile described by: BOYD

Additional Comments: Area is undisturbed. Parent material is a dirty S.S. (greenish brown) with abundant Fe pyrite. No alteration observed. No iron oxides observed.

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A''	0-6"	10YR 2/2	SiCT Loam	(1),2,3 vf,f,m,c,vc gr,pl,(sbk),abk pr,cl,m,sg	(lo),vfr fr,fi vfi,efi	(eo),evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,(3) vf,(f) m,c	10%	10%	10%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f, m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID BK05 Project Name Rico

Location _____ Project Number CA47-05-01

Sample Number 500038 Tag Number 77863

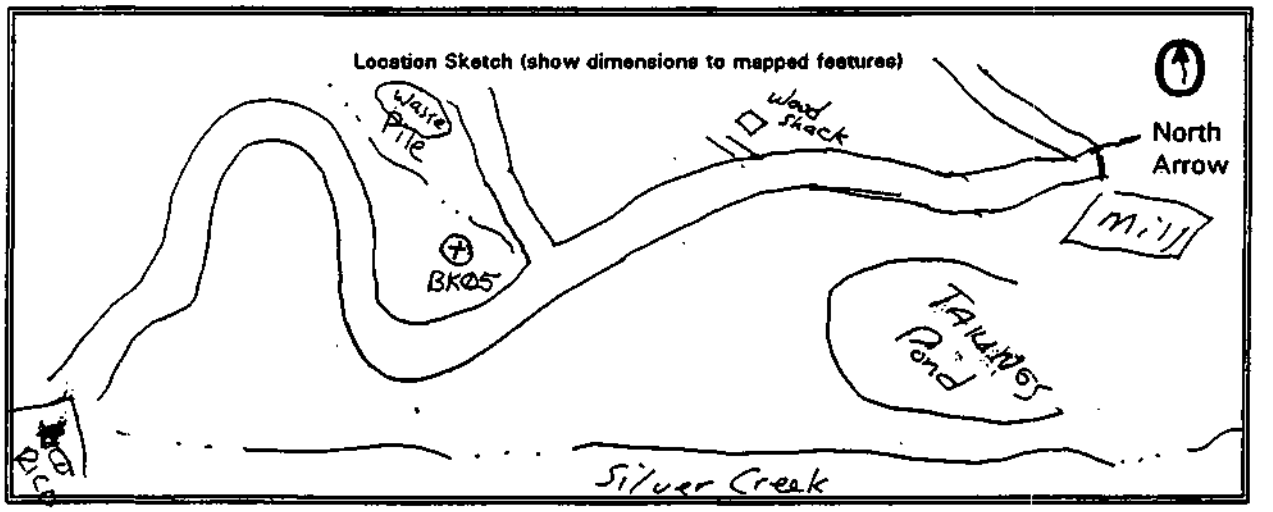
Date 5/23/95 Time 10:45 Photographic Roll RICO1 Number 21

Weather Conditions Mostly cloudy ~ 50°F

Ground Surface Conditions _____

Sampler Name Jeff Paul

Location Sketch (show dimensions to mapped features)



Depth Status | Unified Symbol

		Soil Description	Comments (color, odor, texture, mineralization, alteration)
		ON BACK	

PTI SOIL PROFILE DESCRIPTION

Area/Location: _____ Approx. Elevation: _____ Contract No.: CA47-05-01 Legal Description:

Vegetation: Grasses / Aspen Slope: 2% Date: 5/23/95 T____ R____ Sec.____

Parent Material: Colluvium Aspect: N, NE, E, SE, S, SW, W (NW) Moisture: dry to _____ moist to _____ sl. moist to 6" wet to _____ Station No.: BK05

Physiography: Ridge Relief: (convex), concave, planar % Coarse Frag: 10%

Current Land Use: None Drainage: excessive, somewhat excessive well, (moderately well), somewhat poorly, poorly, very poorly Erosion Type: sheet, (rill) (gully) wind Control Section Depth: 6"

Profile described by: BOYD

MS 5/23/95 No

Additional Comments: Area is undisturbed ~~No Iron oxides or~~ Fe pyrite observed. Slight alteration of feldspars Iron oxides observed. No mineralization observed but area to west has been claims staked by Durango-Argentine mines. Waste pile observed NW of sample area but is downslope of sample area

Parent material - siltstones, shales & sandstones
Hornblende altering to epidote.

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A"	0-6"	10yr 2/1	Silt Loam	(1) 2,3 (vf),f,m,c,vc gr,pl,(sbk),abk pr,cl,m,sg	(lo),vfr fr,fi vfi,efi	(eo),evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,(3) (vf),f (m),c	5%	5%	—
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

misc\soilprof.frm

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID BKØ6 xco 10/23/95 Project Name RICO

Location North of Rico on ~~East~~ West side of Highway 145 Project Number CA47-05-01

Sample Number 500039 Tag Number 77864

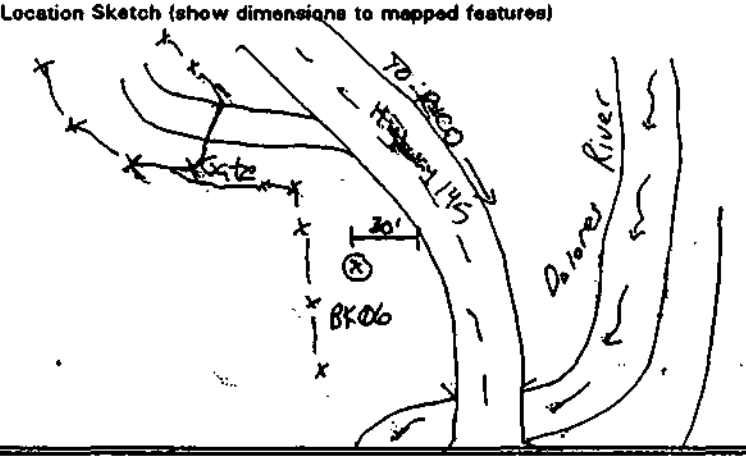
Date 5/23/95 Time 17:05 Photographic Roll RICO1 Number 22

Weather Conditions Mostly cloudy ~ 50°F

Ground Surface Conditions

Sampler Name Jeff Paul

Location Sketch (show dimensions to mapped features)



North Arrow

Depth Status | Unified Symbol

		Soil Description	Comments (color, odor, texture, mineralization, alteration)
		ON-Back	

CA470601\SoilSamp.Frm

PTI SOIL PROFILE DESCRIPTION

Area/Location: _____ Approx. Elevation: _____ Contract No.: CA47-05-01 Legal Description:

Vegetation: grasses Slope: 0-2% Date: 5/23/95 T_____ R_____ Sec._____

Parent Material: Colluvium Aspect: N, NE, E, SE, S, SW, W, (NW) Moisture: dry to 6" moist to _____ Station No.: BK06
sl. moist to ____ wet to _____

Physiography: Side slope Relief: convex, (concave), planar % Coarse Frag: 80%

Current Land Use: Side slope above Highway 145 Drainage: excessive, somewhat excessive well, (moderately well), somewhat poorly, poorly, very poorly Erosion Type: (sheet, rill,) gully, wind Control Section Depth: 6"

Profile described by: Boyd

Additional Comments: Fe pyrite observed in soil, chlorite alteration, epidote & K-spar alterations. Some mineralization observed around area.
Area is not disturbed (~30' ft from road)
Parent material - limestones, siltstones & igneous (mafic minerals) Iron oxides (hematite) prevalent

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-6"	10yr 3/3	Gravelly SiLT Loamy	(1),2,3 (vf),f,m,c,vc gr,pl,sbk,abk pr,c,(m),sg	lo,(vfr) fr,fi vfi,efi	(eo),evsl esl,estr ev	a,c,g,d s,w,i,b	0(1),2,3 (vf,f) m,c	50%	20%	10%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

misc\soilprof.frm

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID JCB 50ØØ4Ø Project Name Rico

Location BKØ7 Project Number CA47-Ø5-Ø1

Sample Number 50ØØ4Ø Tag Number 778666

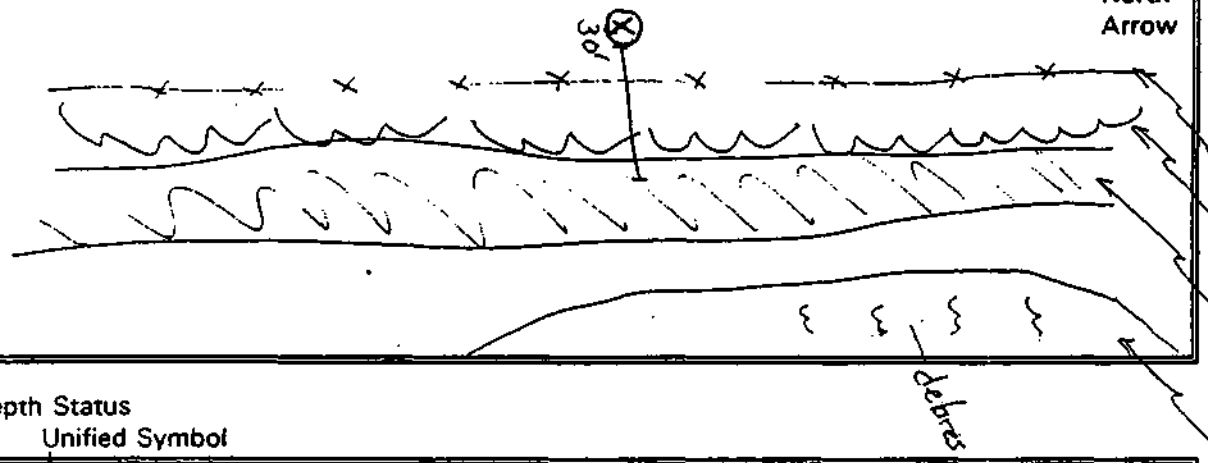
Date 5/23/95 Time 17:40 Photographic Roll RICO 1 Number ~~UA~~ JCB 24

Weather Conditions Choice Sunny & 55°

Ground Surface Conditions

Sampler Name Jeff Paul

Location Sketch (show dimensions to mapped features)



Depth	Status	Unified Symbol	Soil Description	Comments (color, odor, texture, mineralization, alteration)
			OD-back	

CA470601\SoilSamp.Frm

PTI SOIL PROFILE DESCRIPTION

Area/Location: _____ Approx. Elevation: _____ Contract No.: CA47-0501 Legal Description:

Vegetation: grasses/trees Slope: 3% Date: 23-5-95 T____ R____ Sec.____

Parent Material: Colluvium Aspect: N, NE, (E), SE, S, SW, W, NW Moisture: dry to ____ moist to 6" Station No.: BK07

Physiography: mod sideslope Relief: convex, concave, (planar) sl. moist to ____ wet to ____ % Coarse Frag: 25%-30%

Current Land Use: undisturbed rec. Drainage: excessive, somewhat excessive well, moderately well, (somewhat poorly), poorly, very poorly Erosion Type (sheet), rill, gully, wind Control Section Depth: 6"

Profile described by: Carter Borden

Additional Comments: Float: Quartz monzonite, calcareous ss w/ pyrite disseminated
No outcrop present. No prospects or mining activity in the area.
Area is undisturbed aside from treecutting performed by beaver

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-6"	10YR 2/1	silty loam	(1),2,3 vf,(f),m,c,vc gr,pl,(sbk),abk pr,cl,m,sg	lo,vfr (fr),fi vfi,efi	(eo),evsl esl,estr ev	(a),c,g,d s,w,i,b	(0),1,2,3 (vf),f m,c	15-20%	5%	5%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

misc\soilprof.frm

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID BK09 Project Name RICO

Location _____ Project Number CA47-05-01

Sample Number S00042 Tag Number 77868

Date 5/24/95 Time 09:40 Photographic Roll RICO Number 26

Weather Conditions Mostly cloudy, breezy ~50°F

Ground Surface Conditions _____

Sampler Name Jeff Paul

Location Sketch (show dimensions to mapped features)

O
North Arrow

See site map for RSS09

Depth Status | Unified Symbol

		Soil Description	Comments (color, odor, texture, mineralization, alteration)
		ON-BACK	

CA470501\SoilSamp.Frm

PTI SOIL PROFILE DESCRIPTION

Area/Location: _____ Approx. Elevation: _____ Contract No.: CA47-DS-01 Legal Description:

Vegetation: Grass / Aspen Slope: 5% Date: 5-24-95 T____ R____ Sec.____

Parent Material: Colluvium Aspect: N (NE) E, SE, S, SW, W, NW Moisture: dry to ____ moist to 6" Station No.: BK09

Physiography: Side slope above river Relief: convex, (concave), planar sl. moist to ____ wet to ____ % Coarse Frag: 15

Current Land Use: Recreational Drainage: excessive, somewhat excessive well, (moderately well) somewhat poorly, poorly, very poorly Erosion Type: sheet, (rill) gully, wind Control Section Depth: 6"

Profile described by: Boyd

Additional Comments: Parent material - dirty sandstones and siltstones. Lots of Fe pyrites & iron oxides (hematites)

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A1	0-6"	10yr 2/2	Silt Loam	(1),2,3 vf,f,m,c,vc gr,pl,(sbk),abk pr,cl,m,sg	(lo),vfr fr,fi vfi,efi	eo,(evsl) esl,estr ev	a,c,g,d s,w,i,b	0,1,2,(3) vf,(f) (m),(c)	5%	5%	5%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

misc\soilprof.frm

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID BK-10 Project Name RICO

Location SW of Rico above river Project Number CA47-05-01

Sample Number 500043 Tag Number 77869

Date 5/24/95 Time 10:05 Photographic Roll RICO 1 Number 27,28,29

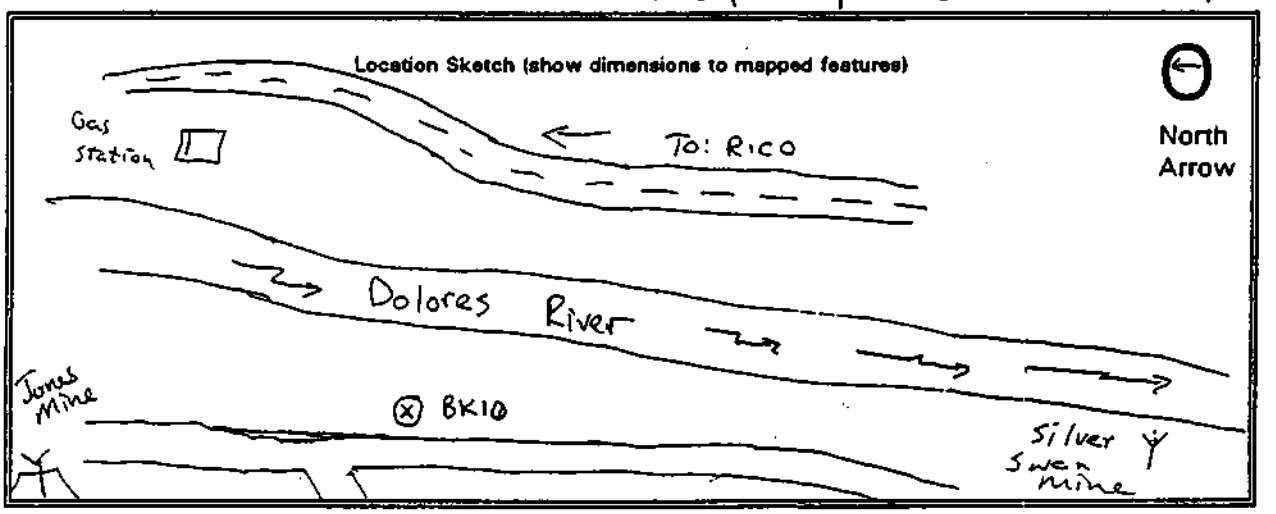
Weather Conditions Mostly cloudy, breezy ~ 50°F

Ground Surface Conditions Slightly hummocky

Sampler Name Jeff Paul

27/28 - Porcupine photos 29 - site photo

Location Sketch (show dimensions to mapped features)



Depth Status | Unified Symbol

		Soil Description	Comments (color, odor, texture, mineralization, alteration)
		ON RACK	

PTI SOIL PROFILE DESCRIPTION

Area/Location: _____ Approx. Elevation: _____ Contract No.: CA47-05-01 Legal Description:

Vegetation: Grasses Slope: 2% Date: 5-24-95 T____ R____ Sec.____

Parent Material: Colluvium Aspect: N, (NE), E, SE, S, SW, W, NW Moisture: dry to ____ moist to ____ Station No.: BK10

Physiography: Mid-slope Bench Relief: convex, (concave), planar sl. moist to 6" wet to ____ % Coarse Frag: 10%

Current Land Use: Recreational Non-disturbed Drainage: excessive, somewhat excessive well, moderately well, somewhat poorly, poorly, very poorly Erosion Type: sheet, rill, gully, wind Control Section Depth: 6"

Profile described by: BOYD

Additional Comments: Parent material - limestones and dirty sandstones. Fe pyrite observed. No alterations observed. No outcrops

Area is non-disturbed

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-6"	10yr 3/3	Silt Loam	(1),2,3 vf,(f),m,c,vc gr,pl,(sbk),abk pr,cl,m,sg	(lo),vfr fr,fi vfi,efi	eo,evsl esl,estr (ev)	a,c,g,d s,w,i,b	0,1,(2),3 vf,(f) (m),c	10%	—	—
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID BK11 Project Name RICO

Location _____ Project Number CA47-05-01

Sample Number 500044 Tag Number 77870

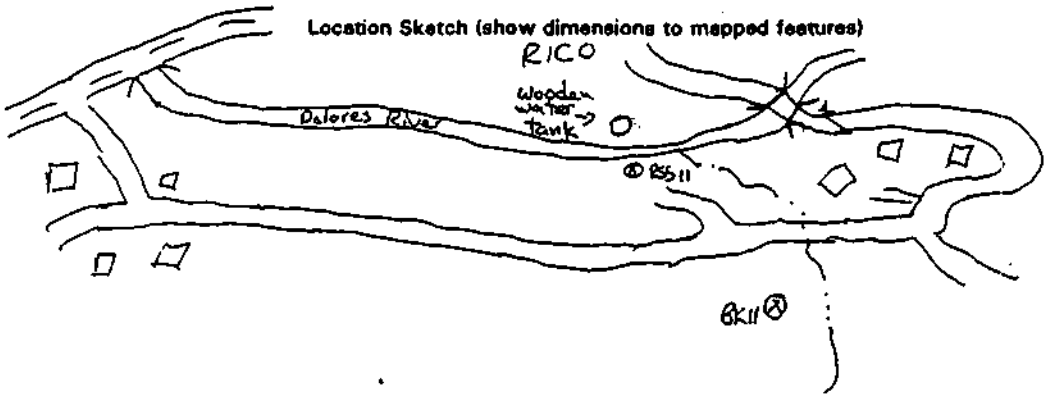
Date 5-24 Time 11:20 Photographic Roll RICO 2 Number 3

Weather Conditions Cloudy, slight winds, few rain drops

Ground Surface Conditions Slight convex, grass covered w/ slight boulders & cobbles

Sampler Name Jeff Paul

Location Sketch (show dimensions to mapped features)



North Arrow

Depth Status	Unified Symbol	Soil Description	Comments (color, odor, texture, mineralization, alteration)
		ON-BACK	

CA470501\SoilSamp.Frm

PTI SOIL PROFILE DESCRIPTION

Area/Location: _____ Approx. Elevation: _____ Contract No.: CA47-05-01 Legal Description:

Vegetation: Grass / Aspens Slope: 7% Date: 5-24-95 T____ R____ Sec.____

Parent Material: Colluvium Aspect: N, NE, E, SE, S, SW, W, NW Moisture: dry to ____ moist to ____ sl. moist to 6" wet to ____ Station No.: BK11

Physiography: Side slope (Non-dist.) Relief: (convex,) concave, planar % Coarse Frag: 50%

Current Land Use: recreational Drainage: excessive, (somewhat excessive) well, moderately well, somewhat poorly, poorly, very poorly Erosion Type: sheet, (rill,) (gully) wind Control Section Depth: 6"

Profile described by: Boyp

Additional Comments: Parent material = dirty s.s. w/ some siltstones, limestones and qtz. monzinites
= Fe pyrite
= Slight iron oxides
= Biotite / & hornblende slightly altered

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A"	0-6"	10 yr 3/2	gravelly Sandy Loam	(1),2,3 vf,(f),m,c,vc gr,pl,(sbk,abk) pr,cl,m,sg	lo,vfr (fr),fi vfi,efi	(eo),evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,(2),3 vf,(f) m,c	30%	10%	10%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID RK12 Project Name RICO

Location _____ Project Number CA47-05-01

Sample Number 500045 Tag Number 77871

Date 5/24/95 Time 14:00 Photographic Roll RICO2 Number 6

Weather Conditions Mostly cloudy, breezy, ~50°F

Ground Surface Conditions Mostly grass & aspens - large boulders present

Sampler Name J. Carter Borden

Location Sketch (show dimensions to mapped features)

O
North Arrow

See Sketch For RSS13

Depth Status | Unified Symbol

		Soil Description	Comments (color, odor, texture, mineralization, alteration)
		ON-Back	

PTI SOIL PROFILE DESCRIPTION

Area/Location: _____ Approx. Elevation: _____ Contract No.: CA47-05-01 Legal Description:

Vegetation: Grass/Aspens Slope: 7% Date: 5-24-95 T ____ R ____ Sec. ____

Parent Material: Colluvium Aspect: N, NE, E, (SE), S, SW, W, NW Moisture: dry to ____ moist to ____ sl. moist to 6" wet to ____ Station No.: BK12

Physiography: Side slope Relief: convex, (concave), planar % Coarse Frag: 40%

Current Land Use: Non-dist. recreational Drainage: excessive, (somewhat excessive) well, moderately well, somewhat poorly, poorly, very poorly Erosion Type: sheet, (rill, gully,) wind Control Section Depth: 6"

Profile described by: Boyd

Additional Comments: Parent material - qtz. monzonite, sandstones, hornblende latite porphyry;
- Lots of fe. pyrite
- Epidote alt.
- No iron oxides

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-6"	10 yr 2/2	Silt Loam	1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,sg	lo,vfr (fr) fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,(2)3 (vf,f) m,c	40%	10%	10%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID BK13 Project Name RICO

Location _____ Project Number CA47-05-01

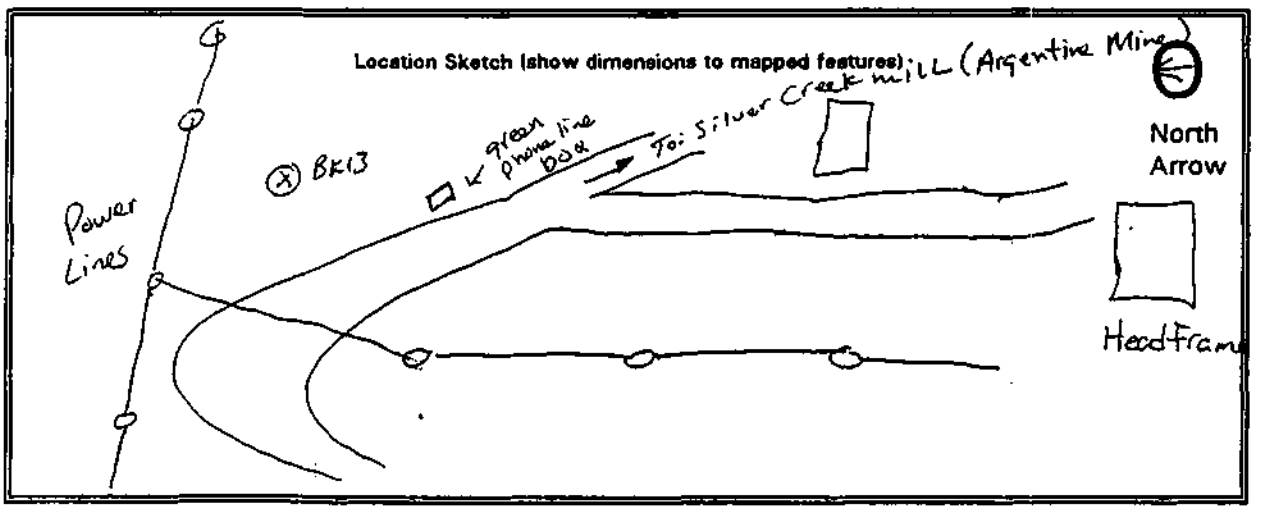
Sample Number 500046 Tag Number 77872

Date 5/24/95 Time 18:10 Photographic Roll RICO 2 Number 14, 15

Weather Conditions Mostly cloudy, ~ 40°F

Ground Surface Conditions Non-dist. grass covered sideslope

Sampler Name Jeff Paul



Depth Status | Unified Symbol

		Soil Description	Comments (color, odor, texture, mineralization, alteration)
		ON-Back	

PTI SOIL PROFILE DESCRIPTION

Area/Location: _____ Approx. Elevation: _____ Contract No.: CA47-05-01 Legal Description:

Vegetation: Grasses Slope: 10% Date: 5/24/95 T_____ R_____ Sec._____

Parent Material: Colluvium Aspect: N, NE, E, SE, S, (SW), W, NW Moisture: dry to _____ moist to _____ Station No.: BK13

sl. moist to 6" wet to _____

Physiography: Side slope Relief: (convex), concave, planar % Coarse Frag: 50%

Current Land Use: Non-disturbed recreational Drainage: (excessive), somewhat excessive well, moderately well, somewhat poorly, poorly, very poorly Erosion Type: (sheet), rill, gully, wind Control Section Depth: 6"

Profile described by: BOYD

Additional Comments: - No pyrite observed
- Parent material = dirty s.s. & conglomerates, siltstones
- No mineralization observed

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-6"	10yr 2/2	SiLT LOAM	(1)2,3 vf,(f),m,c,vc gr,pl,(sbk),abk pr,cl,m,sg	lo,vfr (fr),fi vfi,efi	(eo),evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,(2),3 vf,(f) m,c	20%	10%	20%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID BK14 Project Name RICO

Location _____ Project Number CA47-05-01

Sample Number 800047 Tag Number 77873

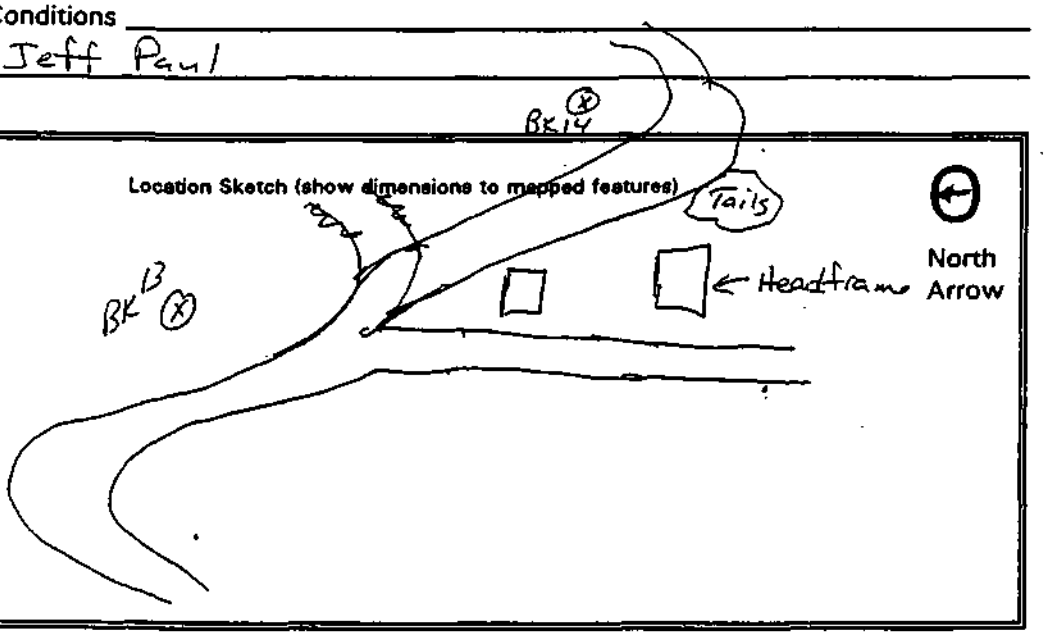
Date 5/24/95 Time 18:30 Photographic Roll RICO2 Number 16

Weather Conditions Mostly cloudy ~ 45°F

Ground Surface Conditions _____

Sampler Name Jeff Paul

Location Sketch (show dimensions to mapped features)



Depth	Status	Unified Symbol	Soil Description	Comments (color, odor, texture, mineralization, alteration)
			ON Back	

PTI SOIL PROFILE DESCRIPTION

Area/Location: _____ Approx. Elevation: _____ Contract No.: CA47-05-01 Legal Description:

Vegetation: Grasses / Aspen Slope: 5% Date: 5/24/95 T ____ R ____ Sec. ____

Parent Material: Colluvium Aspect: N, NE, (E) SE, S, SW, W, NW Moisture: dry to ____ moist to ____ sl. moist to 6" wet to ____ Station No.: BK14

Physiography: Side slope Relief: (convex) concave, planar % Coarse Frag: 55%

Current Land Use: Non-dist. recreational Drainage: excessive, somewhat excessive well, (moderately well), somewhat poorly, poorly, very poorly Erosion Type: (sheet, rill,) gully, wind Control Section Depth: 6"

Profile described by: BOYD

Additional Comments: Area below station is heavily mineralized

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-4	10 yr	Sandy Loam	(1),2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,sg	(lo),vfr fr,fi vfi,efi	eo,evsl (esl),estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c	40%	10%	5%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

misc\soilpro1.frm

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID BK15 Project Name Rico

Location Hillside near east 710 Project Number CA470501

Sample Number 50879 Tag Number 77909

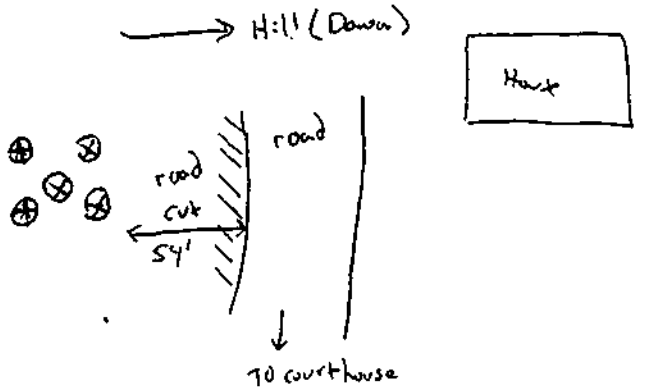
Date 5/31 Time 9:51 Photographic Roll Rico 3 Number 16

Weather Conditions Sunny

Ground Surface Conditions moist, bare soil 30% grass (native) 70%

Sampler Name Borden / Writer

Location Sketch (show dimensions to mapped features)



North Arrow

Depth Status | Unified Symbol

		Soil Description	Comments (color, odor, texture, mineralization, alteration)
		ON Back	

PTI SOIL PROFILE DESCRIPTION

Area/Location: Hill | Approx. Elevation: | Contract No.: CA970501 | Legal Description:

Vegetation: Native grasses | Slope: 10% | Date: 5/31/95 | T ____ R ____ Sec. ____

Parent Material: Silty Loam | Aspect: N, NE, E, SE, S, SW, W, NW | Moisture: dry to ____ moist to 2" sl. moist to ____ wet to ____ | Station No.: BK15

Physiography: Hillside | Relief: convex, concave, (planar) | % Coarse Frag: 60%

Current Land Use: Hillside in residential area | Drainage: excessive, somewhat excessive (well) moderately well, somewhat poorly, poorly, very poorly | Erosion Type: (sheet) rill, gully, wind | Control Section Depth: 0-2"

Profile described by: Writer / Burton

Additional Comments: Background sample above roadcut that exposed a mineralized outcrop - weathered soils sparse pyrite

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
~~0-2~~ A	0-2"	10YR 2/2	Silty Loam	(1) 2,3 vf,f,m,c,vc gr,pl,(sbk),abk pr,cl,m,sg	(lo),vfr (fr),fi vfi,efi	(eo),evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,(2),3 vf,f m,c	30%	20%	10
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

RICO SOIL SAMPLING FIELD DATA FORM

Sample ID 500041 Project Name Rico

Location BK08 Project Number CA47-0501

Sample Number BK 500041 Tag Number 778167

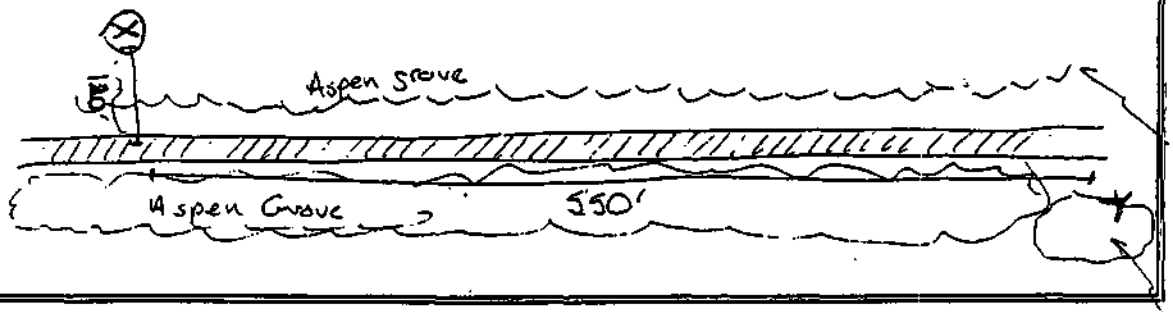
Date 23-5-95 Time 18:30 Photographic Roll Rico 1 Number 25

Weather Conditions Partly sunny, 50°

Ground Surface Conditions Steep, grass, ASPEN covered slope

Sampler Name Jeff Paul

Locadon Sketch (show dimensions to mapped features)



Depth	Status	Unified Symbol	Soil Description	Comments (color, odor, texture, mineralization, alteration)

CA470501\SoilSamp.Frm

PTI SOIL PROFILE DESCRIPTION

Area/Location: _____ Approx. Elevation: _____ Contract No.: CA47 0501 Legal Description:

Vegetation: Grass / Aspen Slope: 40-50% Date: 23-5-95 T_____ R_____ Sec._____

Parent Material: Colluvium Aspect: N, NE, (E) SE, S, SW, W, NW Moisture: dry to _____ moist to 6" Station No.: BK08

Physiography: mod-steep slope Relief: convex, (concave) planar sl. moist to ____ wet to _____ % Coarse Frag: 40%

Current Land Use: undisturbed recreational Drainage: excessive, somewhat excessive well, moderately well, (somewhat poorly), poorly, very poorly Erosion Type: (sheet) rill, gully, wind Control Section Depth: 6"

Profile described by: Carter Borden

Additional Comments: Undisturbed slope, colluvium ; grassy, aspen grove
Parent Material : Colluvium
Float : Qtz monzonite med grained : no pyrite or FeOx staining
No immediate exposure to mine Tailing or prospects

Horizon	Depth	Color (Moist)	Texture	Structure	Consistency (Moist)	Reaction	Boundary	Roots	% Gravel	% Cobbles	% Stones & Boulders
A	0-6"	10YR 2/2	Sandy loam	(1)2,3 (vf),f,m,c,vc gr,pl,(sbk),abk pr,cl,m,sg	lo,vfr (fr),fi vfi,efi	(eo),evsl esl,estr ev	(a),c,g,d s,w,i,b	0(1),2,3 vf(f) (m)c	30%	5%	5%
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			
				1,2,3 vf,f,m,c,vc gr,pl,sbk,abk pr,cl,m,st	lo,vfr fr,fi vfi,efi	eo,evsl esl,estr ev	a,c,g,d s,w,i,b	0,1,2,3 vf,f m,c			

Appendix D

Laboratory Data Sheets

Analytical Technologies, Inc.
17400 S.W. Upper Boones Ferry Road, Suite 270 Durham, OR. 97224
(503) 684-0447 (503) 620-0393 (FAX)

ATI I.D. 506501

June 15, 1995

Laura Jones
PTI Environmental Services
4000 Kruse Way Pl.
#2-285
Lake Oswego, OR 97035

Project Name / Number: Rico / CA47-05-01

Attention: Laura Jones

On June 1, 1995, Analytical Technologies, Inc. received eighteen soil samples for analysis for the above listed project. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

If you have any questions or comments, please do not hesitate to contact us at (503)684-0447.

Vivian Fuchise
Project Manager

Steven E. Stanley
Laboratory Manager

SES:alm
Enclosure

Analytical Technologies, Inc.

SAMPLE CROSS REFERENCE SHEET

CLIENT:	PTI Environmental	**ATI I.D.:**	506501
PROJECT #:	CA47-05-01		
PROJECT NAME:	Rico	**MATRIX:**	SOIL

ATI #	CLIENT DESCRIPTION	DATE SAMPLED
506501-1	SO0061	5/25/95
506501-2	SO0062	5/25/95
506501-3	SO0063	5/25/95
506501-4	SO0064	5/25/95
506501-5	SO0065	5/25/95
506501-6	SO0067	5/25/95
506501-7	SO0068	5/25/95
506501-8	SO0069	5/25/95
506501-9	SO0070	5/30/95
506501-10	SO0071	5/30/95
506501-11	SO0072	5/30/95
506501-12	SO0073	5/30/95
506501-13	SO0074	5/30/95
506501-14	SO0075	5/30/95
506501-15	SO0076	5/30/95
506501-16	SO0077	5/30/95
506501-17	SO0078	5/31/95
506501-18	SO0079	5/31/95

----------TOTALS----------

MATRIX	# SAMPLES
SOIL	18

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of the report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

ANALYTICAL SCHEDULE

CLIENT:	PTI Environmental	**ATI I.D.:**	506501
PROJECT #:	CA47-05-01		
PROJECT NAME:	Rico		

ANALYSIS	TECHNIQUE	REFERENCE	LAB
Arsenic	ICAP	EPA 6010	PLD
Arsenic	AA/GF	EPA 7060	PLD
Cadmium	ICAP	EPA 6010	PLD
Copper	ICAP	EPA 6010	PLD
Lead	ICAP	EPA 6010	PLD
Manganese	ICAP	EPA 6010	PLD
Silver	ICAP	EPA 6010	PLD
Zinc	ICAP	EPA 6010	PLD

PLD = ATI - Portland
R = ATI - Renton
SD = ATI - San Diego
PHX = ATI - Phoenix
PNR = ATI - Pensacola
FC = ATI - Fort Collins
SUB = Subcontract

Analytical Technologies, Inc.

CASE NARRATIVE

PROJECT: Rico PROJECT#: CA47-05-01 ATI ID: 506501

Samples were sieved to less than 2 mm before preparation and analysis. Percent solids were performed on the unsieved portion of the sample. The soil samples were digested using EPA SW-846 method 3050 by taking 1.0 g to 100 ml final volume. The digestions were analyzed on the Inductively Coupled Plasma Spectrophotometer by EPA SW-846 method 6010. Sample SO0072 was analyzed for arsenic on the Graphite Furnace Atomic Absorption Spectrophotometer by EPA SW-846 method 7060.

Please note that the ICP interference check samples ICSA and ICSAB were analyzed and are within limits (indicated by the lack of "Q" flags on the raw data). The ICSA is initially run at a ten fold dilution because the calcium and magnesium are above the linear range in the undiluted standard.

Due to matrix interferences, the serial dilution for zinc was out of limits and flagged with an "E", indicating these values should be estimated.

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	Method Blank	**ATI I.D.:**	506501-0
CLIENT:	PTI Environmental	**DATE SAMPLED:**	NA
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	NA
PROJECT NAME:	Rico	**DATE DIGESTED:**	06/07/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/08/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

PARAMETER	RESULTS	METHOD
ARSENIC	< 10	6010
CADMIUM	< 0.5	6010
COPPER	< 1	6010
LEAD	< 5	6010
MANGANESE	< 1	6010
SILVER	< 1	6010
ZINC	< 1	6010

Analyst: 6/15/95

000005

Reviewer: 6/16/95

Analytical**Technologies**, Inc.

METALS RESULTS

CLIENT I.D.:	Method Blank	**ATI I.D.:**	506501-0
CLIENT:	PTI Environmental	**DATE SAMPLED:**	NA
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	NA
PROJECT NAME:	Rico	**DATE DIGESTED:**	06/12/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/14/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

PARAMETER	RESULTS	METHOD
ARSENIC	< 0.5	7060

Analyst: [signature] 6/15/95

Reviewer: [signature] 6/15/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0061	**ATI I.D.:**	506501-1
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/25/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	06/01/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	06/07/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/08/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	28	6010
CADMIUM	6.6	6010
COPPER	156	6010
LEAD	594	6010
MANGANESE	2280	6010
SILVER	7	6010
ZINC	1540	6010

Analyst: 6/15/95

000007

Reviewer: 6/16/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0062	**ATI I.D.:**	506501-2
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/25/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	06/01/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	06/07/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/08/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	21	6010
CADMIUM	3.6	6010
COPPER	179	6010
LEAD	287	6010
MANGANESE	1230	6010
SILVER	2	6010
ZINC	579	6010

Analyst: [signature] 6/15/95

000005

Reviewer: [signature] 6/15/95

Analytical**Technologies**, Inc.

METALS RESULTS

CLIENT I.D.:	S00063	**ATI I.D.:**	506501-3
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/25/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	06/01/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	06/07/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/08/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	19	6010
CADMIUM	6.8	6010
COPPER	70	6010
LEAD	402	6010
MANGANESE	1130	6010
SILVER	2	6010
ZINC	1240	6010

Analyst: 6/15/95

Reviewer: 6/16/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	S00064	**ATI I.D.:**	506501-4
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/25/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	06/01/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	06/07/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/08/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	19	6010
CADMIUM	7.3	6010
COPPER	76	6010
LEAD	400	6010
MANGANESE	1120	6010
SILVER	3	6010
ZINC	1200	6010

Analyst: JW 6/6/95

000010

Reviewer: DJ 6/6/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0065	**ATI I.D.:**	506501-5
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/25/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	06/01/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	06/07/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/08/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	18	6010
CADMIUM	7.3	6010
COPPER	66	6010
LEAD	406	6010
MANGANESE	1110	6010
SILVER	4	6010
ZINC	1250	6010

Analyst: Slh. 6/15/95

Reviewer: [illegible]

00011

Analytical**Technologies**, Inc.

METALS RESULTS

CLIENT I.D.:	SO0067	**ATI I.D.:**	506501-6
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/25/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	06/01/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	06/07/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/08/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	35	6010
CADMIUM	49.0	6010
COPPER	221	6010
LEAD	2430	6010
MANGANESE	2390	6010
SILVER	11	6010
ZINC	6100	6010

Analyst: [signature] 6/15/95

000612

Reviewer: [signature]

Analytical**Technologies,**Inc.

METALS RESULTS

CLIENT I.D.:	SO0068	**ATI I.D.:**	506501-7
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/25/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	06/01/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	06/07/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/08/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	29	6010
CADMIUM	34.3	6010
COPPER	263	6010
LEAD	3920	6010
MANGANESE	3450	6010
SILVER	16	6010
ZINC	4820	6010

Analyst: [signature] 6/12/95

Reviewer: [signature] 6/16/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0069	**ATI I.D.:**	506501-8
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/25/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	06/01/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	06/07/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/08/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	18	6010
CADMIUM	5.5	6010
COPPER	154	6010
LEAD	893	6010
MANGANESE	1260	6010
SILVER	3	6010
ZINC	932	6010

Analyst: [signature] 6/15/95

Reviewer: [signature] 6/15/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0070	**ATI I.D.:**	506501-9
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/30/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	06/01/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	06/07/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/08/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS		METHOD
ARSENIC	24		6010
CADMIUM	119		6010
COPPER	494		6010
LEAD	7960		6010
MANGANESE	5410		6010
SILVER	27		6010
ZINC	18200	D	6010

D - Value from a five fold dilution.

Analyst: [signature] 6/15/95

Reviewer: [signature] 6/16/95

Analytical**Technologies**, Inc.

METALS RESULTS

CLIENT I.D.:	S00071	**ATI I.D.:**	506501-10
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/30/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	06/01/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	06/07/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/08/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	25	6010
CADMIUM	6.2	6010
COPPER	87	6010
LEAD	368	6010
MANGANESE	1210	6010
SILVER	2	6010
ZINC	1100	6010

Analyst: _____ 6/12/95

Reviewer: _____

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0072	ATI I.D.:	506501-11
CLIENT:	PTI Environmental	DATE SAMPLED:	05/30/95
PROJECT #:	CA47-05-01	DATE RECEIVED:	06/01/95
PROJECT NAME:	Rico	DATE DIGESTED:	06/07,12/95
SAMPLE MATRIX:	SOIL	DATE ANALYZED:	06/08,14/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	16.3	7060
CADMIUM	6.9	6010
COPPER	103	6010
LEAD	306	6010
MANGANESE	851	6010
SILVER	2	6010
ZINC	919	6010

Analyst: [signature] 6/15/95

Reviewer: [signature]

Analytical**Technologies**, Inc.

METALS RESULTS

CLIENT I.D.:	SO0073	**ATI I.D.:**	506501-12
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/30/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	06/01/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	06/07/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/08/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	16	6010
CADMIUM	2.6	6010
COPPER	46	6010
LEAD	146	6010
MANGANESE	1020	6010
SILVER	< 1	6010
ZINC	360	6010

Analyst: 6/15/95

Reviewer: 6/16/95

000018

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0074	**ATI I.D.:**	506501-13
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/30/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	06/01/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	06/07/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/08/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	28	6010
CADMIUM	5.0	6010
COPPER	99	6010
LEAD	825	6010
MANGANESE	1530	6010
SILVER	10	6010
ZINC	916	6010

Analyst: 6/15/95

000019 Reviewer: 6/16/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0075	**ATI I.D.:**	506501-14
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/30/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	06/01/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	06/07/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/08/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	20	6010
CADMIUM	9.1	6010
COPPER	117	6010
LEAD	908	6010
MANGANESE	1660	6010
SILVER	7	6010
ZINC	1340	6010

Analyst: 6/15/95

Reviewer:

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0076	**ATI I.D.:**	506501-15
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/30/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	06/01/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	06/07/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/08/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	24	6010
CADMIUM	8.6	6010
COPPER	122	6010
LEAD	859	6010
MANGANESE	1480	6010
SILVER	6	6010
ZINC	1280	6010

Analyst: 6/15/95

Reviewer: 6/16/95

Analytical**Technologies**, Inc.

METALS RESULTS

CLIENT I.D.:	SO0077	**ATI I.D.:**	506501-16
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/30/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	06/01/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	06/07/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/08/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	18	6010
CADMIUM	7.3	6010
COPPER	116	6010
LEAD	1240	6010
MANGANESE	1680	6010
SILVER	8	6010
ZINC	1140	6010

Analyst: JLH 6/15/95

Reviewer: 6/16/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0078	ATI I.D.:	506501-17
CLIENT:	PTI Environmental	DATE SAMPLED:	05/31/95
PROJECT #:	CA47-05-01	DATE RECEIVED:	06/01/95
PROJECT NAME:	Rico	DATE DIGESTED:	06/07/95
SAMPLE MATRIX:	SOIL	DATE ANALYZED:	06/08/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	27	6010
CADMIUM	8.9	6010
COPPER	131	6010
LEAD	4920	6010
MANGANESE	1000	6010
SILVER	10	6010
ZINC	1580	6010

Analyst: 6/15/95

Reviewer: 6/16/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0079	**ATI I.D.:**	506501-18
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/31/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	06/01/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	06/07/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/08/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	25	6010
CADMIUM	3.8	6010
COPPER	37	6010
LEAD	155	6010
MANGANESE	11300	6010
SILVER	2	6010
ZINC	1360	6010

Analyst: [signature] 6/15/95

Reviewer: [signature] 6/16/95

000024

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PTI ENVIRONMENTAL SERVICES

CHAIN OF CUSTODY RECORD/ SAMPLE ANALYSIS REQUEST FORM

Project: (Name and Number) Rico CA47-05-01

Samplers: (Signature) J. Carter Brown S Paul

Sampling Contact: Laura Jones

Phone: (503) 636-4338

Ship Samples to: ATI

Attn: Vivian

Sample No.	Tag No.	Date	Time	Sample Matrix: Groundwater	Soil	Surface Water	Sediment	Other	Other	Concentration (L M H)	Composite or Grab	Analyses Requested: Site Metals						Extra Container	Archive	Remarks
S0ØØ61	77887	30-May 95	1420		X					L	G	X								Site Metals = As, Cd, Cu, Pb, Zn, Ag, MN
S0ØØ62	77888		1425								G									EPA Method 6010/7000
S0ØØ63	77889		1425								C									
S0ØØ64	77890		1500								G									
S0ØØ65	77891		1505								G									
S0ØØ67	77893		1525								C									
S0ØØ68	77894		1555								C									
S0ØØ69	77895	↓	1630		↓					↓	C	↓								
S0ØØ70	77896	30 May 95	14:41								C									
S0ØØ71	77897		15:12								C									
S0ØØ72	77898		15:30								C									
S0ØØ73	77899		16:30								C									
S0ØØ74	77900		16:50								C									
S0ØØ75	77904	↓	17:50		↓					↓	C	↓								

Method of Shipment: Federal Express

Condition of Samples Upon Receipt: _____

Custody Seal Intact: Yes ☐ No ☐ None ☐ Broken by: _____

Relinquished by: J. Carter Brown (Signature) Received by: _____ (Signature) Date/Time 31/5/95 10:30

Relinquished by: _____ (Signature) Received by: _____ (Signature) Date/Time _____

Relinquished by: _____ (Signature) Received by Mobile Lab for Field Analysis: _____ (Signature) Date/Time _____

Received for Lab by: _____ (Signature) Date/Time _____

Distribution: Original and One Copy - Accompany Shipment; One Copy - Project File

FF Rev 1/91

PTI ENVIRONMENTAL SERVICES

CHAIN OF CUSTODY RECORD/ SAMPLE ANALYSIS REQUEST FORM

2406

Page __ of __

Project: (Name and Number) Rico CA47-05-01

Samplers: (Signature) J. Carter Baden

Sampling Contact: Laura Jones
Phone: (503) 636-4338
Ship Samples to: ATI
Attn: Vivian

Sample No.	Tag No.	Date	Time	Sample Matrix: Groundwater	Soil	Surface Water	Sediment	Other	Other	Concentration (L M H)	Composite or Grab	Analyses Requested: Site Metals						Extra Container	Archive	Remarks
S0Ø076	77905	30 May 95	17:55		X					L	G	X								Site Metals = As, Cd, Cu
S0Ø077	77906	↓	17:55		↓						G									Pb, Zn, Ag, Mn
S0Ø078	77907	31 MAY 95	9:41								C									EPA Method 6010/7000
S0Ø079	77909	↓	9:50		↓					↓	C	↓								

Method of Shipment: Federal Express

Condition of Samples Upon Receipt: _____

Custody Seal Intact: Yes ☐ No ☐ None ☐ Broken by: _____

Relinquished by: J. Carter Baden (Signature) — Received by: _____ (Signature) — Date/Time 31/5/95 10:30

Relinquished by: _____ (Signature) — Received by: _____ (Signature) — Date/Time _____

Relinquished by: _____ (Signature) — Received by Mobile Lab for Field Analysis: _____ (Signature) — Date/Time _____

Received for Lab by: _____ (Signature) — Date/Time _____

Distribution: Original and One Copy - Accompany Shipment; One Copy - Project File

FF Rev 1/91

Analytical**Technologies,**Inc. 17400 S.W. Upper Boones Ferry Road, Suite 270 Durham, OR. 97224
(503) 684-0447 (503) 620-0393 (FAX)

ATI I.D. 505660

June 9, 1995

Laura Jones
PTI Environmental Services
4000 Kruse Way Pl.
#2-285
Lake Oswego, OR 97035

Project Name / Number: Rico / CA47-05-01

Attention: Laura Jones

On May 26, 1995, Analytical Technologies, Inc. received twenty soil samples for analysis for the above listed project. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

If you have any questions or comments, please do not hesitate to contact us at (503)684-0447.

Vivian Fuchise
Project Manager

Steven E. Stanley
Laboratory Manager

SES:alm
Enclosure

Analytical Technologies, Inc.

SAMPLE CROSS REFERENCE SHEET

CLIENT:	PTI Environmental	**ATI I.D.:**	505660
PROJECT #:	CA47-05-01		
PROJECT NAME:	Rico	**MATRIX:**	SOIL

ATI #	CLIENT DESCRIPTION	DATE SAMPLED
505660-1	SO0009	5/24/95
505660-2	SO0010	5/24/95
505660-3	SO0011	5/24/95
505660-4	SO0012	5/24/95
505660-5	SO0013	5/24/95
505660-6	SO0014	5/24/95
505660-7	SO0015	5/24/95
505660-8	SO0016	5/24/95
505660-9	SO0017	5/24/95
505660-10	SO0018	5/24/95
505660-11	SO0019	5/24/95
505660-12	SO0020	5/24/95
505660-13	SO0043	5/24/95
505660-14	SO0044	5/24/95
505660-15	SO0045	5/24/95
505660-16	SO0046	5/24/95
505660-17	SO0047	5/24/95
505660-18	SO0048	5/25/95
505660-19	SO0021	5/25/95
505660-20	SO0022	5/25/95

----------TOTALS----------

MATRIX	# SAMPLES
SOIL	20

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of the report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

ANALYTICAL SCHEDULE

CLIENT: PTI Environmental **ATI I.D.:** 505660
PROJECT #: CA47-05-01
PROJECT NAME: Rico

ANALYSIS	TECHNIQUE	REFERENCE	LAB
Arsenic	ICAP	EPA 6010	PLD
Cadmium	ICAP	EPA 6010	PLD
Copper	ICAP	EPA 6010	PLD
Lead	ICAP	EPA 6010	PLD
Manganese	ICAP	EPA 6010	PLD
Silver	ICAP	EPA 6010	PLD
Zinc	ICAP	EPA 6010	PLD

PLD = ATI - Portland
R = ATI - Renton
SD = ATI - San Diego
PHX = ATI - Phoenix
PNR = ATI - Pensacola
FC = ATI - Fort Collins
SUB = Subcontract

Analytical Technologies, Inc.

CASE NARRATIVE

PROJECT: Rico PROJECT#: CA47-05-01 ATI ID: 505660

Samples were sieved to less than 2 mm before preparation and analysis. Percent solids were performed on the unsieved portion of the sample. The soil samples were digested using EPA SW-846 method 3050 by taking 1.0 g to 100 ml final volume. The digestions were analyzed on the Inductively Coupled Plasma Spectrophotometer by EPA SW-846 method 6010.

Please note that the ICP interference check samples ICSA and ICSAB were analyzed and are within limits (indicated by the lack of "Q" flags on the raw data). The ICSA is initially run at a ten fold dilution because the calcium and magnesium are above the linear range in the undiluted standard.

Due to matrix interferences, the serial dilution for lead and zinc was out of limits and flagged with an "E", indicating these values should be estimated.

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	Method Blank	ATI I.D.:	505660-0
CLIENT:	PTI Environmental	DATE SAMPLED:	NA
PROJECT #:	CA47-05-01	DATE RECEIVED:	NA
PROJECT NAME:	Rico	DATE DIGESTED:	05/30/95
SAMPLE MATRIX:	SOIL	DATE ANALYZED:	05/30/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

PARAMETER	RESULTS	METHOD
ARSENIC	< 10	6010
CADMIUM	< 0.5	6010
COPPER	< 1	6010
LEAD	< 5	6010
MANGANESE	< 1	6010
SILVER	< 1	6010
ZINC	< 1	6010

Analyst: [signature] 6/9/95

Reviewer: [signature] 6/9/95

00000.3

Analytical**Technologies,**Inc.

METALS RESULTS

CLIENT I.D.:	SO0009	**ATI I.D.:**	505660-1
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/24/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/26/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/30/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	05/30/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	~~30~~ 28 TH June 23, 1995	6010
CADMIUM	4.1	6010
COPPER	40	6010
LEAD	184	6010
MANGANESE	1130	6010
SILVER	< 1	6010
ZINC	647	6010

Analyst: [signature] 6/9/95

Reviewer: [signature] 6/10/95

000006

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0010	ATI I.D.:	505660-2
CLIENT:	PTI Environmental	DATE SAMPLED:	05/24/95
PROJECT #:	CA47-05-01	DATE RECEIVED:	05/26/95
PROJECT NAME:	Rico	DATE DIGESTED:	05/30/95
SAMPLE MATRIX:	SOIL	DATE ANALYZED:	05/30/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	~~40~~ 36 JN June 23, 95	6010
CADMIUM	1.5	6010
COPPER	66	6010
LEAD	143	6010
MANGANESE	1030	6010
SILVER	1	6010
ZINC	200	6010

Analyst: [signature] 6/9/95

Reviewer: [signature] 6/9/95

000008

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0011	**ATI I.D.:**	505660-3
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/24/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/26/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/30/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	05/30/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	~~60~~ 54 JN Jun 23, 95	6010
CADMIUM	1.2	6010
COPPER	94	6010
LEAD	124	6010
MANGANESE	1900	6010
SILVER	2	6010
ZINC	226	6010

Analyst: [illegible] 6/9/95

Reviewer: [illegible]

000003

Analytical**Technologies**, Inc.

METALS RESULTS

CLIENT I.D.:	SO0012	**ATI I.D.:**	505660-4
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/24/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/26/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/30/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	05/30/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	~~30~~ 27 Jun 23,95	6010
CADMIUM	1.0	6010
COPPER	125	6010
LEAD	124	6010
MANGANESE	710	6010
SILVER	< 1	6010
ZINC	175	6010

Analyst: [signature] 6/9/95

Reviewer: [signature] 6/9/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0013	**ATI I.D.:**	505660-5
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/24/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/26/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/30/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	05/30/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	~~20~~ 21 Jun 23, 95	6010
CADMIUM	0.8	6010
COPPER	49	6010
LEAD	78	6010
MANGANESE	1090	6010
SILVER	< 1	6010
ZINC	171	6010

Analyst: [signature] 6/9/95

Reviewer: [signature]

000010

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0014	**ATI I.D.:**	505660-6
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/24/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/26/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/30/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	05/30/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	~~30~~ 25 ZH June 23, 95	6010
CADMIUM	1.9	6010
COPPER	51	6010
LEAD	115	6010
MANGANESE	777	6010
SILVER	1	6010
ZINC	285	6010

Analyst: CH. 6/9/95

Reviewer: D.T. 6/9/95

000012

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0015	**ATI I.D.:**	505660-7
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/24/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/26/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/30/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	05/30/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
	Jun 23 '95	
ARSENIC	~~30~~ 32	6010
CADMIUM	5.7	6010
COPPER	84	6010
LEAD	424	6010
MANGANESE	2560	6010
SILVER	26	6010
ZINC	927	6010

Analyst: [illegible] 6/9/95

Reviewer: [illegible] 6/9/95

000013

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0016	**ATI I.D.:**	505660-8
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/24/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/26/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/30/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	05/30/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	~~30~~ 25 Jun 23, 95	6010
CADMIUM	6.7	6010
COPPER	93	6010
LEAD	471	6010
MANGANESE	894	6010
SILVER	3	6010
ZINC	860	6010

Analyst: [signature] 6/9/95

Reviewer: [signature] 6/9/95

000013

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0017	**ATI I.D.:**	505660-9
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/24/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/26/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/30/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	05/30/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	~~30~~ 28	6010
CADMIUM	10.0	6010
COPPER	102	6010
LEAD	1150	6010
MANGANESE	1230	6010
SILVER	7	6010
ZINC	1410	6010

Jun 23, 95

Analyst: 6/9/95

Reviewer: 6/19/95

00014

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0018	**ATI I.D.:**	505660-10
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/24/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/26/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/30/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	05/30/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	~~30~~ 27 JW June 23, 95	6010
CADMIUM	12.8	6010
COPPER	103	6010
LEAD	791	6010
MANGANESE	1460	6010
SILVER	7	6010
ZINC	1990	6010

Analyst: [signature] 6/9/95

Reviewer: [signature] 6/9/95

000015

Analytical**Technologies**, Inc.

METALS RESULTS

CLIENT I.D.:	SO0019	**ATI I.D.:**	505660-11
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/24/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/26/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/30/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	05/30/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	~~30~~ 32 N June 5, 95	6010
CADMIUM	8.5	6010
COPPER	73	6010
LEAD	364	6010
MANGANESE	6240	6010
SILVER	3	6010
ZINC	1180	6010

Analyst: [signature] 6/9/95

Reviewer: [signature] 6/9/95

000016

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0020	**ATI I.D.:**	505660-12
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/24/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/26/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/30/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	05/30/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	~~100~~ 98	6010
CADMIUM	9.2	6010
COPPER	641	6010
LEAD	6180	6010
MANGANESE	529	6010
SILVER	34	6010
ZINC	1520	6010

Jun 23, 95

Analyst: 6/9/95

Reviewer: 6/9/95

000017

Analytical**Technologies**, Inc.

METALS RESULTS

CLIENT I.D.:	SO0043	**ATI I.D.:**	505660-13
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/24/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/26/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/30/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	05/30/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
	Jun 21, 95	
ARSENIC	~~40~~ 43	6010
CADMIUM	1.1	6010
COPPER	24	6010
LEAD	108	6010
MANGANESE	3430	6010
SILVER	1	6010
ZINC	398	6010

Analyst: 6/9/95

Reviewer: 6/9/95

000018

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0044	ATI I.D.:	505660-14
CLIENT:	PTI Environmental	DATE SAMPLED:	05/24/95
PROJECT #:	CA47-05-C1	DATE RECEIVED:	05/26/95
PROJECT NAME:	Rico	DATE DIGESTED:	05/30/95
SAMPLE MATRIX:	SOIL	DATE ANALYZED:	05/30/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	~~40~~ 38 JH Jw 21,95	6010
CADMIUM	< 0.7	6010
COPPER	45	6010
LEAD	64	6010
MANGANESE	1500	6010
SILVER	< 1	6010
ZINC	167	6010

Analyst: [illegible] 6/9/95

Reviewer: [illegible] 6/9/95

000029

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0045	**ATI I.D.:**	505660-15
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/24/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/26/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/30/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	05/30/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	~~20~~ 23	6010
CADMIUM	6.3	6010
COPPER	184	6010
LEAD	441	6010
MANGANESE	1250	6010
SILVER	1	6010
ZINC	685	6010

Jun 23, 95

Analyst: JEH 6/9/95

Reviewer: D.H. 6/9/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0046	ATI I.D.:	505660-16
CLIENT:	PTI Environmental	DATE SAMPLED:	05/24/95
PROJECT #:	CA47-05-01	DATE RECEIVED:	05/26/95
PROJECT NAME:	Rico	DATE DIGESTED:	05/30/95
SAMPLE MATRIX:	SOIL	DATE ANALYZED:	05/30/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	~~20~~ 22 JM Jun 23, 95	6010
CADMIUM	4.2	6010
COPPER	26	6010
LEAD	228	6010
MANGANESE	1180	6010
SILVER	1	6010
ZINC	555	6010

Analyst: 6/9/95

Reviewer: 6/9/95

000021

AnalyticalTechnologies,Inc.

METALS RESULTS

CLIENT I.D.:	SO0047	ATI I.D.:	505660-17
CLIENT:	PTI Environmental	DATE SAMPLED:	05/24/95
PROJECT #:	CA47-05-01	DATE RECEIVED:	05/26/95
PROJECT NAME:	Rico	DATE DIGESTED:	05/30/95
SAMPLE MATRIX:	SOIL	DATE ANALYZED:	05/30/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
	A Jun 23, 95	
ARSENIC	~~40~~ 37	6010
CADMIUM	6.7	6010
COPPER	210	6010
LEAD	1310	6010
MANGANESE	1270	6010
SILVER	4	6010
ZINC	1130	6010

Analyst: [signature] 6/9/95

Reviewer: [signature] 6/9/95

Analytical**Technologies**, Inc.

METALS RESULTS

CLIENT I.D.:	SO0048	**ATI I.D.:**	505660-18
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/25/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/26/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/30/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	05/30/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	~~170~~ 104 N Jun 23, 95	6010
CADMIUM	35.1	6010
COPPER	96	6010
LEAD	946	6010
MANGANESE	439	6010
SILVER	4	6010
ZINC	254	6010

Analyst: [signature] 6/9/95

Reviewer: [signature] 6/9/95

000023

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0021	ATI I.D.:	505660-19
CLIENT:	PTI Environmental	DATE SAMPLED:	05/25/95
PROJECT #:	CA47-05-01	DATE RECEIVED:	05/26/95
PROJECT NAME:	Rico	DATE DIGESTED:	05/30/95
SAMPLE MATRIX:	SOIL	DATE ANALYZED:	05/30/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	~~30~~ 24 JW Jun 23, 95	6010
CADMIUM	7.6	6010
COPPER	84	6010
LEAD	353	6010
MANGANESE	948	6010
SILVER	3	6010
ZINC	1570	6010

Analyst: [signature] 6/9/95

Reviewer: [signature] 6/9/95

000024

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0022	**ATI I.D.:**	505660-20
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/25/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/26/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/30/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	05/30/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	~~30~~ 34	6010
CADMIUM	5.0	6010
COPPER	29	6010
LEAD	244	6010
MANGANESE	1090	6010
SILVER	< 1	6010
ZINC	1140	6010

Analyst: 6/9/95

Reviewer:

000025

2404

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PTI ENVIRONMENTAL SERVICES

CHAIN OF CUSTODY RECORD/ SAMPLE ANALYSIS REQUEST FORM

Project: (Name and Number) RICO CA 47-05-01

Sampler: (Signature) S Pal

Sampling Contact: Laura Jones
Phone: (503) 636-4338
Ship Samples to: ATI

Attn: Vivian

Sample No.	Tag No.	Date	Time	Sample Matrix: Groundwater	Soil	Surface Water	Sediment	Other	Other	Concentration (L M H)	Composite or Grab	Analyses Requested: + Site Metals						Extra Container	Archive	Remarks
S00009	77834	5/14/95	0920		X					L	C	+								Site Metals = As, Cd, Cr, Pb, Zn, Hg, Mn - EPA method 6010/7000 Series
S00010	77835		1030																	
S00011	77836		1100																	
S00012	77837		1140																	
S00013	77838		1330																	
S00014	77839		1445																	
S00015	77840		1440																	
S00016	77841		1545																	
S00017	77842		1600																	
S00018	77843		1615																	
S00019	77844		1700																	
S00020	77845		1215																	
S00043	77869		1005																	
S00044	77870	↓	1120		↓					↓	↓	↓								

Method of Shipment: Federal Express

Condition of Samples Upon Receipt: _____

Custody Seal Intact: Yes ☐ No ☐ None ☐ Broken by: _____

Relinquished by: S Pal (Signature) Received by: _____ (Signature) Date/Time 24-May-95 @ 1740

Relinquished by: _____ (Signature) Received by: _____ (Signature) Date/Time _____

Relinquished by: _____ (Signature) Received by Mobile Lab for Field Analysis: _____ (Signature) Date/Time _____

Received for Lab by: _____ (Signature) Date/Time _____

Distribution: Original and One Copy - Accompany Shipment; One Copy - Project File

FF Rev 1/91

PTI ENVIRONMENTAL SERVICES

CHAIN OF CUSTODY RECORD/ SAMPLE ANALYSIS REQUEST FORM

2405

Page __ of __

Project: (Name and Number) RICO CA47-05-01

Samplers: (Signature)

Sampling Contact: LAURA Jones
Phone: (303) 636-4338
Ship Samples to: ATI

Attn: Vivian

Sample No.	Tag No.	Date	Time	Sample Matrix: Groundwater	Soil	Surface Water	Sediment	Other	Other	Concentration (L M H)	Composite or Grab	Analyses Requested: Site Metals						Extra Container	Archive	Remarks
S00045	77871	5/24/95	1400		X					L	C	X								Site Metals = As, Cd, Cu, Pb, Zn, Hg, Mn - EPA methods 6010/7000 series
S00046	77872	↓	18:10		X					↓	↓	X								
S00047	77873	↓	18:30		X					↓	↓	X								
S00048	77874	5/25/95	08:00		X					L	G	X								
S00021	77846	↓	0910		X					L	X	X								
S00022	77847	↓	0915		X					L	X	X								

Method of Shipment: Federal Express

Condition of Samples Upon Receipt: _____

Custody Seal Intact: Yes ☐ No ☐ None ☐ Broken by: _____

Relinquished by: _____ (Signature) Received by: _____ (Signature) Date/Time 25-May-95 @ 0920

Relinquished by: _____ (Signature) Received by: _____ (Signature) Date/Time _____

Relinquished by: _____ (Signature) Received by Mobile Lab for Field Analysis: _____ (Signature) Date/Time _____

Received for Lab by: _____ (Signature) Date/Time _____

Distribution: Original and One Copy - Accompany Shipment; One Copy - Project File

FF Rev 1/91

Analytical**Technologies,**Inc. 17400 S.W. Upper Boones Ferry Road, Suite 270 Durham, OR. 97224
(503) 684-0447 (503) 620-0393 (FAX)

ATI I.D. 505661

June 9, 1995

Laura Jones
PTI Environmental Services
4000 Kruse Way Pl.
#2-285
Lake Oswego, OR 97035

Project Name / Number: Rico / CA47-05-01

Attention: Laura Jones

On May 26, 1995, Analytical Technologies, Inc. received twenty soil samples for analysis for the above listed project. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

If you have any questions or comments, please do not hesitate to contact us at (503)684-0447.

Vivian Fuchise
Project Manager

Steven E. Stanley
Laboratory Manager

SES:alm
Enclosure

000001

AnalyticalTechnologies,Inc

SAMPLE CROSS REFERENCE SHEET

CLIENT:	PTI Environmental	**ATI I.D.:**	505661
PROJECT #:	CA47-05-01		
PROJECT NAME:	Rico	**MATRIX:**	SOIL

ATI #	CLIENT DESCRIPTION	DATE SAMPLED
505661-1	SO0001	5/23/95
505661-2	SO0002	5/23/95
505661-3	SO0003	5/23/95
505661-4	SO0004	5/23/95
505661-5	SO0005	5/23/95
505661-6	SO0006	5/23/95
505661-7	SO0007	5/23/95
505661-8	SO0008	5/23/95
505661-9	SO0031	5/23/95
505661-10	SO0032	5/23/95
505661-11	SO0033	5/23/95
505661-12	SO0034	5/23/95
505661-13	SO0035	5/23/95
505661-14	SO0036	5/23/95
505661-15	SO0037	5/23/95
505661-16	SO0038	5/23/95
505661-17	SO0039	5/23/95
505661-18	SO0040	5/23/95
505661-19	SO0041	5/23/95
505661-20	SO0042	5/24/95

----------TOTALS----------

MATRIX	# SAMPLES
SOIL	20

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of the report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical**Technologies,**Inc.

ANALYTICAL SCHEDULE

CLIENT:	PTI Environmental	**ATI I.D.:**	505661
PROJECT #:	CA47-05-01		
PROJECT NAME:	Rico		

ANALYSIS	TECHNIQUE	REFERENCE	LAB
Arsenic	ICAP	EPA 6010	PLD
Cadmium	ICAP	EPA 6010	PLD
Copper	ICAP	EPA 6010	PLD
Lead	ICAP	EPA 6010	PLD
Manganese	ICAP	EPA 6010	PLD
Silver	ICAP	EPA 6010	PLD
Zinc	ICAP	EPA 6010	PLD

PLD = ATI - Portland
R = ATI - Renton
SD = ATI - San Diego
PHX = ATI - Phoenix
PNR = ATI - Pensacola
FC = ATI - Fort Collins
SUB = Subcontract

Analytical**Technologies**, Inc.

CASE NARRATIVE

PROJECT: Rico PROJECT#: CA47-05-01 ATI ID: 505661

Samples were sieved to less than 2 mm before preparation and analysis. Percent solids were performed on the unsieved portion of the sample. The soil samples were digested using EPA SW-846 method 3050 by taking 1.0 g to 100 ml final volume. The digestions were analyzed on the Inductively Coupled Plasma Spectrophotometer by EPA SW-846 method 6010. Two samples were analyzed for arsenic on the Graphite Furnace Atomic Absorption Spectrophotometer by EPA SW-846 method 7060.

Please note that the ICP interference check samples ICSA and ICSAB were analyzed and are within limits (indicated by the lack of "Q" flags on the raw data). The ICSA is initially run at a ten fold dilution because the calcium and magnesium are above the linear range in the undiluted standard.

Due to matrix interferences, the serial dilution for lead and zinc was out of limits and flagged with an "E", indicating these values should be estimated. The arsenic spike on sample SO0034 (505661-12) was out of limits due to matrix interferences and flagged with an "F". The sample was post spiked to verify the matrix interference. The blank spike was within limits.

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	Method Blank	**ATI I.D.:**	505661-0
CLIENT:	PTI Environmental	**DATE SAMPLED:**	NA
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	NA
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/31/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/02/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

PARAMETER	RESULTS	METHOD
ARSENIC	< 10	6010
CADMIUM	< 0.5	6010
COPPER	< 1	6010
LEAD	< 5	6010
MANGANESE	< 1	6010
SILVER	< 1	6010
ZINC	< 1	6010

Analyst: 6/9/95

Reviewer: 6/9/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	Method Blank	**ATI I.D.:**	505661-0
CLIENT:	PTI Environmental	**DATE SAMPLED:**	NA
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	NA
PROJECT NAME:	Rico	**DATE DIGESTED:**	06/06/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/08/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

PARAMETER	RESULTS	METHOD
ARSENIC	< 0.5	7060

Analyst: JLh. 6/9/95

Reviewer: DT 6/9/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0001	**ATI I.D.:**	505661-1
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/23/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/26/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/31/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/02/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	~~40~~ 39 JN Jun 23, 95	6010
CADMIUM	1.8	6010
COPPER	71	6010
LEAD	351	6010
MANGANESE	924	6010
SILVER	3	6010
ZINC	258	6010

Analyst: [signature] 6/9/95

Reviewer: [signature] 6/9/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0002	**ATI I.D.:**	505661-2
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/23/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/26/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/31/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/02/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	~~50~~ 51	6010
CADMIUM	< 0.6	6010
COPPER	40	6010
LEAD	112	6010
MANGANESE	1360	6010
SILVER	1	6010
ZINC	174	6010

000008

Analyst: 6/9/95

Reviewer: 6/19/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0003	**ATI I.D.:**	505661-3
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/23/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/26/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/31/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/02/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
	23 June 23, 95	
ARSENIC	~~20~~	6010
CADMIUM	0.9	6010
COPPER	28	6010
LEAD	105	6010
MANGANESE	923	6010
SILVER	1	6010
ZINC	169	6010

Analyst: [signature] 6/9/95

Reviewer: [signature] 6/10/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0004	**ATI I.D.:**	505661-4
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/23/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/26/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/31/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/02/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
	Jun 23,95	
ARSENIC	~~30~~ 34	6010
CADMIUM	25.4	6010
COPPER	159	6010
LEAD	138	6010
MANGANESE	3220	6010
SILVER	3	6010
ZINC	1880	6010

Analyst: 6/9/95

Reviewer: 6/9/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0005	ATI I.D.:	505661-5
CLIENT:	PTI Environmental	DATE SAMPLED:	05/23/95
PROJECT #:	CA47-05-01	DATE RECEIVED:	05/26/95
PROJECT NAME:	Rico	DATE DIGESTED:	05/31/95
SAMPLE MATRIX:	SOIL	DATE ANALYZED:	06/02/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
	Jun 23, 95	
ARSENIC	~~40~~ 37	6010
CADMIUM	9.0	6010
COPPER	224	6010
LEAD	1080	6010
MANGANESE	1830	6010
SILVER	9	6010
ZINC	1430	6010

Analyst: [illegible] 6/9/95

Reviewer: [illegible] 6/9/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0006	**ATI I.D.:**	505661-6
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/23/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/26/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/31/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/02/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	20 17 June 23, 95	6010
CADMIUM	4.8	6010
COPPER	58	6010
LEAD	240	6010
MANGANESE	634	6010
SILVER	2	6010
ZINC	717	6010

000012

Analyst: [signature] 6/9/95

Reviewer: [signature] 6/9/95

Analytical**Technologies**, Inc.

METALS RESULTS

CLIENT I.D.:	SO0007	**ATI I.D.:**	505661-7
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/23/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/26/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/31/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/02/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	~~30~~ 28	6010
CADMIUM	27.9	6010
COPPER	152	6010
LEAD	2230	6010
MANGANESE	1840	6010
SILVER	14	6010
ZINC	3060	6010

Jun 23, 95

Analyst: 6/9/95

Reviewer: 6/9/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0008	**ATI I.D.:**	505661-8
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/23/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/26/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/31/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/02/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
	JM 23,95	
ARSENIC	~~60~~ 56	6010
CADMIUM	16.7	6010
COPPER	724	6010
LEAD	3460	6010
MANGANESE	2690	6010
SILVER	47	6010
ZINC	2120	6010

Analyst: [signature] 6/9/95

Reviewer: [signature] 6/9/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0031	**ATI I.D.:**	505661-9
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/23/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/26/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/31/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/02/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS			METHOD
ARSENIC	30	60	DATA ERRONEOUS (SEE REVISED RESULTS OF 6/14 Art Burden ↑	6010
CADMIUM	1.7	16.7		6010
COPPER	80	757		6010
LEAD	340	3620		6010
MANGANESE	964	2820		6010
SILVER	3	49		6010
ZINC	239	2230		6010

Analyst: [illegible] 6/9/95

Reviewer: [illegible] 6/9/95

Analytical**Technologies**, Inc.

METALS RESULTS

CLIENT I.D.:	SO0032	**ATI I.D.:**	505661-10
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/23/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/26/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/31/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/02/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

PARAMETER	RESULTS	METHOD
	A 23 June 95	
ARSENIC	~~100~~ 104	6010
CADMIUM	34.8	6010
COPPER	102	6010
LEAD	988	6010
MANGANESE	465	6010
SILVER	4	6010
ZINC	268	6010

Analyst: JH 6/9/95

Reviewer: N.T 6/9/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0033	ATI I.D.:	505661-11
CLIENT:	PTI Environmental	DATE SAMPLED:	05/23/95
PROJECT #:	CA47-05-01	DATE RECEIVED:	05/26/95
PROJECT NAME:	Rico	DATE DIGESTED:	05/31/95
SAMPLE MATRIX:	SOIL	DATE ANALYZED:	06/02/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	~~20~~ 18 TM 23 June 95	6010
CADMIUM	1.2	6010
COPPER	24	6010
LEAD	213	6010
MANGANESE	604	6010
SILVER	< 2	6010
ZINC	243	6010

000017

Analyst: [signature] 6/9/95

Reviewer: [signature] 6/9/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0034	**ATI I.D.:**	505661-12
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/23/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/26/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/31,06/06/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/02,08/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	14.0	7060
CADMIUM	< 0.8	6010
COPPER	22	6010
LEAD	198	6010
MANGANESE	604	6010
SILVER	< 2	6010
ZINC	261	6010

Analyst: 6/9/95

Reviewer: 6/9/95

AnalyticalTechnologies,Inc.

METALS RESULTS

CLIENT I.D.:	S00035	ATI I.D.:	505661-13
CLIENT:	PTI Environmental	DATE SAMPLED:	05/23/95
PROJECT #:	CA47-05-01	DATE RECEIVED:	05/26/95
PROJECT NAME:	Rico	DATE DIGESTED:	05/31/95
SAMPLE MATRIX:	SOIL	DATE ANALYZED:	06/02/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	~~20~~ 18 (23 June 95)	6010
CADMIUM	3.1	6010
COPPER	97	6010
LEAD	412	6010
MANGANESE	552	6010
SILVER	2	6010
ZINC	515	6010

Analyst: 6/9/95

Reviewer: 6/9/95

Analytical**Technologies,**Inc.

METALS RESULTS

CLIENT I.D.:	SO0036	**ATI I.D.:**	505661-14
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/23/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/26/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/31/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/02/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	~~20~~ 25 N June 23 95	6010
CADMIUM	4.3	6010
COPPER	33	6010
LEAD	82	6010
MANGANESE	818	6010
SILVER	1	6010
ZINC	506	6010

Analyst: Jeh. 6/9/95

Reviewer: D.T. 6/9/95

Analytical**Technologies**, Inc.

METALS RESULTS

CLIENT I.D.:	SO0037	**ATI I.D.:**	505661-15
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/23/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/26/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/31/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/02/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	~~20~~ 24 W June 2395	6010
CADMIUM	1.7	6010
COPPER	25	6010
LEAD	177	6010
MANGANESE	914	6010
SILVER	2	6010
ZINC	281	6010

000021

Analyst: [signature] 6/9/95

Reviewer: [signature] 6/9/95

Analytical**Technologies**, Inc.

METALS RESULTS

CLIENT I.D.:	SO0038	**ATI I.D.:**	505661-16
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/23/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/26/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/31,06/06/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/02,08/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	8.0	7060
CADMIUM	10.9	6010
COPPER	68	6010
LEAD	617	6010
MANGANESE	1100	6010
SILVER	3	6010
ZINC	1000	6010

Analyst: 6/9/95

Reviewer: 6/9/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0039	**ATI I.D.:**	505661-17
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/23/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/26/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/31/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/02/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	20 19 TH 23 June 95	6010
CADMIUM	0.7	6010
COPPER	38	6010
LEAD	151	6010
MANGANESE	923	6010
SILVER	2	6010
ZINC	277	6010

Analyst: fllh 6/9/95

Reviewer: D 6/9/95

AnalyticalTechnologies,Inc.

METALS RESULTS

CLIENT I.D.:	SO0040	ATI I.D.:	505661-18
CLIENT:	PTI Environmental	DATE SAMPLED:	05/23/95
PROJECT #:	CA47-05-01	DATE RECEIVED:	05/26/95
PROJECT NAME:	Rico	DATE DIGESTED:	05/31/95
SAMPLE MATRIX:	SOIL	DATE ANALYZED:	06/02/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	~~20~~ 19 23 Jun 95	6010
CADMIUM	1.3	6010
COPPER	53	6010
LEAD	66	6010
MANGANESE	1020	6010
SILVER	1	6010
ZINC	161	6010

Analyst: [signature] 6/9/95

Reviewer: [signature] 6/9/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0041	**ATI I.D.:**	505661-19
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/23/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/26/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/31/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/02/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	20 24 Jun 23, 95	6010
CADMIUM	< 0.7	6010
COPPER	39	6010
LEAD	57	6010
MANGANESE	872	6010
SILVER	< 1	6010
ZINC	98	6010

Analyst: [signature] 6/9/95

Reviewer: [signature] 6/9/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0042	**ATI I.D.:**	505661-20
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/24/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/26/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/31/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/02/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	20 (correct to 2 sig figs JH 23 June 95)	6010
CADMIUM	3.3	6010
COPPER	42	6010
LEAD	141	6010
MANGANESE	2120	6010
SILVER	1	6010
ZINC	683	6010

Analyst: [signature] 6/9/95

Reviewer: [signature] 6/9/95

Analytical**Technologies,**Inc.

17400 S.W. Upper Boones Ferry Road, Suite 270 Durham, OR. 97224
(503) 684-0447 (503) 620-0393 (FAX)

ATI I.D. 505661

June 14, 1995

Laura Jones
PTI Environmental Services
4000 Kruse Way Pl.
#2-285
Lake Oswego, OR 97035

Project Name / Number: Rico / CA47-05-01

Attention: Laura Jones

On May 26, 1995, Analytical Technologies, Inc. received twenty soil samples for analysis for the above listed project. The samples were analyzed with EPA methodology or equivalent methods.

Please note that sample SO0031 was not reported correctly. The sample before SO0031 in the run sequence was mistakenly analyzed twice and SO0031 was skipped. SO0031 has now been correctly analyzed and the ammended page and the accompanying raw data are included for your review.

If you have any questions or comments, please do not hesitate to contact us at (503)684-0447.

Vivian Fuchise
Project Manager

Steven E. Stanley
Laboratory Manager

SES:alm
Enclosure

000171

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0031	**ATI I.D.:**	505661-9
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/23/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/26/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	05/31/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/13/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	30	6010
CADMIUM	1.7	6010
COPPER	80	6010
LEAD	340	6010
MANGANESE	964	6010
SILVER	3	6010
ZINC	239	6010

Analyst: 6/13/95

000172

Reviewer: 6/13/95

PTI ENVIRONMENTAL SERVICES

CHAIN OF CUSTODY RECORD/ SAMPLE ANALYSIS REQUEST FORM

2402

Page __ of __

Project: (Name and Number) RICO CA47-05-01

Samplers: (Signature) S PAUL

Sampling Contact: LAURA Jones

Phone: (503) 636-4338

Ship Samples to: ATI

Attn: Vivian

Sample No.	Tag No.	Date	Time	Sample Matrix: Groundwater	Soil	Surface Water	Sediment	Other	Other	Concentration (L M H)	Composite or Grab	Analyses Requested: Site Metals method (6010/7000)						Extra Container	Archive
S00001	77826	5/23/95	0930		X					L	C	X							
S00002	77827		0945																
S00003	77828		1015																
S00004	77829		1100																
S00005	77830		1125																
S00006	77831		1200																
S00007	77832		1230																
S00008	77833		1250																
S00031	77856		0930																
S00032	77857		0815																
S00033	77858		1430																
S00034	77859		1430																
S00035	77860		1445																
S00036	77861	↓	1505		↓					↓	↓	↓							

Remarks: Site Metals = As, Cd, Co, Pb, Zn, Ag, Mn - EPA method 6010/7000 series

Method of Shipment: Federal Express

Condition of Samples Upon Receipt: _____

Custody Seal Intact: Yes ☐ No ☐ None ☐ Broken by: _____

Relinquished by: S Paul (Signature) Received by: _____ (Signature) Date/Time 24-May-95 @ 1700

Relinquished by: _____ (Signature) Received by: _____ (Signature) Date/Time _____

Relinquished by: _____ (Signature) Received by Mobile Lab for Field Analysis: _____ (Signature) Date/Time _____

Received for Lab by: _____ (Signature) Date/Time _____

Distribution: Original and One Copy - Accompany Shipment; One Copy - Project File

FF Rev 1/91

PTI ENVIRONMENTAL SERVICES

CHAIN OF CUSTODY RECORD/ SAMPLE ANALYSIS REQUEST FORM

2403

Page __ of __

ISP

Project: (Name and Number) RFC Rico CA47-05-01

Samplers: (Signature) S Pal

Sampling Contact: Laura Jones

Phone: (503) 636-4338

Ship Samples to: ATI

Attn: Vivian

Sample No.	Tag No.	Date	Time	Sample Matrix: Groundwater	Soil	Surface Water	Sediment	Other	Other	Concentration (L M H)	Composite or Grab	Analyses Requested: Site metals method (6010/7000)						Extra Container	Archive
S00037	77862	5/23/95	1610		X					L	C	X							
S00038	77863	"	1645		"					"	"	"							
S00039	77864	"	1705		"					"	"	"							
S00040	77866	"	1740		"					"	"	"							
S00041	77867	"	1830		"					"	"	"							
S00042	77868	5/24/95	0940		"					"	"	"							

Remarks: Site Metals = As, Cd, Cu, Pb, Zn, Ag, Mn - EPA method 6010/7000 series

Method of Shipment: Federal Express

Condition of Samples Upon Receipt: _____

Custody Seal Intact: Yes ☐ No ☐ None ☐ Broken by: _____

Relinquished by: S Pal (Signature) — Received by: _____ (Signature) — Date/Time 24-May-95 1705

Relinquished by: _____ (Signature) — Received by: _____ (Signature) — Date/Time _____

Relinquished by: _____ (Signature) — Received by Mobile Lab for Field Analysis: _____ (Signature) — Date/Time _____

Received for Lab by: _____ (Signature) — Date/Time _____

Distribution: Original and One Copy - Accompany Shipment; One Copy - Project File

FF Rev 1/91

Analytical**Technologies,** Inc.

17400 S.W. Upper Boones Ferry Road, Suite 270 Durham, OR. 97224
(503) 684-0447 (503) 620-0393 (FAX)

ATI I.D. 505682

June 14, 1995

Laura Jones
PTI Environmental Services
4000 Kruse Way Pl.
#2-285
Lake Oswego, OR 97035

Project Name / Number: Rico / CA47-05-01

Attention: Laura Jones

On May 31, 1995, Analytical Technologies, Inc. received twenty soil samples for analysis for the above listed project. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

If you have any questions or comments, please do not hesitate to contact us at (503)684-0447.

Vivian Fuchise
Project Manager

Steven E. Stanley
Laboratory Manager

SES:alm
Enclosure

Analytical Technologies, Inc.

SAMPLE CROSS REFERENCE SHEET

CLIENT:	PTI Environmental	**ATI I.D.:**	505682
PROJECT #:	CA47-05-01		
PROJECT NAME:	Rico	**MATRIX:**	SOIL

ATI #	CLIENT DESCRIPTION	DATE SAMPLED
505682-1	SO0023	5/25/95
505682-2	SO0024	5/25/95
505682-3	SO0025	5/25/95
505682-4	SO0026	5/25/95
505682-5	SO0027	5/25/95
505682-6	SO0028	5/25/95
505682-7	SO0029	5/25/95
505682-8	SO0030	5/25/95
505682-9	SO0049	5/25/95
505682-10	SO0050	5/25/95
505682-11	SO0051	5/25/95
505682-12	SO0052	5/25/95
505682-13	SO0053	5/25/95
505682-14	SO0054	5/25/95
505682-15	SO0055	5/25/95
505682-16	SO0056	5/25/95
505682-17	SO0057	5/25/95
505682-18	SO0058	5/25/95
505682-19	SO0059	5/25/95
505682-20	SO0060	5/25/95

----------TOTALS----------

MATRIX	# SAMPLES
SOIL	20

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of the report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

ANALYTICAL SCHEDULE

CLIENT:	PTI Environmental	**ATI I.D.:**	505682
PROJECT #:	CA47-05-01		
PROJECT NAME:	Rico		

ANALYSIS	TECHNIQUE	REFERENCE	LAB
Arsenic	ICAP	EPA 6010	PLD
Cadmium	ICAP	EPA 6010	PLD
Copper	ICAP	EPA 6010	PLD
Lead	ICAP	EPA 6010	PLD
Manganese	ICAP	EPA 6010	PLD
Silver	ICAP	EPA 6010	PLD
Zinc	ICAP	EPA 6010	PLD

PLD = ATI - Portland
R = ATI - Renton
SD = ATI - San Diego
PHX = ATI - Phoenix
PNR = ATI - Pensacola
FC = ATI - Fort Collins
SUB = Subcontract

Analytical Technologies, Inc.

CASE NARRATIVE

PROJECT: Rico PROJECT#: CA47-05-01 ATI ID: 505682

Samples were sieved to less than 2 mm before preparation and analysis. Percent solids were performed on the unsieved portion of the sample. The soil samples were digested using EPA SW-846 method 3050 by taking 1.0 g to 100 ml final volume. The digestions were analyzed on the Inductively Coupled Plasma Spectrophotometer by EPA SW-846 method 6010.

Please note that the ICP interference check samples ICSA and ICSAB were analyzed and are within limits (indicated by the lack of "Q" flags on the raw data). The ICSA is initially run at a ten fold dilution because the calcium and magnesium are above the linear range in the undiluted standard.

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	Method Blank	ATI I.D.:	505682-0
CLIENT:	PTI Environmental	DATE SAMPLED:	NA
PROJECT #:	CA47-05-01	DATE RECEIVED:	NA
PROJECT NAME:	Rico	DATE DIGESTED:	06/02/95
SAMPLE MATRIX:	SOIL	DATE ANALYZED:	06/07/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

PARAMETER	RESULTS	METHOD
ARSENIC	< 10	6010
CADMIUM	< 0.5	6010
COPPER	< 1	6010
LEAD	< 5	6010
MANGANESE	< 1	6010
SILVER	< 1	6010
ZINC	< 1	6010

Analyst: 6/12/95

Reviewer: 6/14/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0023	**ATI I.D.:**	505682-1
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/25/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/31/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	06/02/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/07/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	31	6010
CADMIUM	23.7	6010
COPPER	221	6010
LEAD	1760	6010
MANGANESE	1650	6010
SILVER	12	6010
ZINC	2860	6010

Analyst: 6/14/95

Reviewer: 6/19/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	S00024	**ATI I.D.:**	505682-2
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/25/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/31/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	06/02/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/07/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	43	6010
CADMIUM	33.7	6010
COPPER	259	6010
LEAD	2900	6010
MANGANESE	2010	6010
SILVER	23	6010
ZINC	3460	6010

Analyst: [signature] 6/14/95

Reviewer: [signature] 6/14/95

Analytical**Technologies,**Inc.

METALS RESULTS

CLIENT I.D.:	SO0025	**ATI I.D.:**	505682-3
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/25/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/31/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	06/02/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/07/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	33	6010
CADMIUM	29.3	6010
COPPER	140	6010
LEAD	1610	6010
MANGANESE	1470	6010
SILVER	18	6010
ZINC	2130	6010

000008

Analyst: 6/14/95

Reviewer: 6/16/14/95

Analytical**Technologies**, Inc.

METALS RESULTS

CLIENT I.D.:	SO0026	**ATI I.D.:**	505682-4
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/25/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/31/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	06/02/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/07/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	39	6010
CADMIUM	1.9	6010
COPPER	88	6010
LEAD	380	6010
MANGANESE	1970	6010
SILVER	1	6010
ZINC	369	6010

Analyst: 6/14/95

Reviewer: 6/14/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0027	**ATI I.D.:**	505682-5
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/25/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/31/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	06/02/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/07/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	53	6010
CADMIUM	< 0.6	6010
COPPER	71	6010
LEAD	56	6010
MANGANESE	1810	6010
SILVER	< 1	6010
ZINC	140	6010

000010

Analyst: 6/14/95

Reviewer: 6/16/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0028	**ATI I.D.:**	505682-6
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/25/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/31/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	06/02/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/07/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	44	6010
CADMIUM	< 0.6	6010
COPPER	105	6010
LEAD	68	6010
MANGANESE	1570	6010
SILVER	< 1	6010
ZINC	148	6010

Analyst: 6/14/95

Reviewer: 6/14/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	S00029	ATI I.D.:	505682-7
CLIENT:	PTI Environmental	DATE SAMPLED:	05/25/95
PROJECT #:	CA47-05-01	DATE RECEIVED:	05/31/95
PROJECT NAME:	Rico	DATE DIGESTED:	06/02/95
SAMPLE MATRIX:	SOIL	DATE ANALYZED:	06/07/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	25	6010
CADMIUM	8.5	6010
COPPER	114	6010
LEAD	851	6010
MANGANESE	1000	6010
SILVER	5	6010
ZINC	1240	6010

Analyst: [signature] 6/14/95

Reviewer: [signature] 6/14/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0030	ATI I.D.:	505682-8
CLIENT:	PTI Environmental	DATE SAMPLED:	05/25/95
PROJECT #:	CA47-05-01	DATE RECEIVED:	05/31/95
PROJECT NAME:	Rico	DATE DIGESTED:	06/02/95
SAMPLE MATRIX:	SOIL	DATE ANALYZED:	06/07/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	24	6010
CADMIUM	7.9	6010
COPPER	89	6010
LEAD	617	6010
MANGANESE	977	6010
SILVER	2	6010
ZINC	1030	6010

Analyst: fcr. 6/14/95

Reviewer: D.A. 6/14/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	S00049	ATI I.D.:	505682-9
CLIENT:	PTI Environmental	DATE SAMPLED:	05/25/95
PROJECT #:	CA47-05-01	DATE RECEIVED:	05/31/95
PROJECT NAME:	Rico	DATE DIGESTED:	06/02/95
SAMPLE MATRIX:	SOIL	DATE ANALYZED:	06/07/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	22	6010
CADMIUM	5.8	6010
COPPER	51	6010
LEAD	402	6010
MANGANESE	950	6010
SILVER	1	6010
ZINC	741	6010

Analyst: 6/14/95

Reviewer: 6/14/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0050	**ATI I.D.:**	505682-10
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/25/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/31/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	06/02/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/07/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	29	6010
CADMIUM	22.0	6010
COPPER	234	6010
LEAD	2100	6010
MANGANESE	2710	6010
SILVER	12	6010
ZINC	3560	6010

Analyst: 6/14/95

Reviewer: 6/14/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0051	**ATI I.D.:**	505682-11
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/25/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/31/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	06/02/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/07/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	31	6010
CADMIUM	16.5	6010
COPPER	145	6010
LEAD	1060	6010
MANGANESE	2190	6010
SILVER	7	6010
ZINC	2380	6010

Analyst: 6/14/95

Reviewer: 6/14/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0052	**ATI I.D.:**	505682-12
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/25/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/31/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	06/02/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/07/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	29	6010
CADMIUM	11.0	6010
COPPER	137	6010
LEAD	928	6010
MANGANESE	1320	6010
SILVER	4	6010
ZINC	2040	6010

000017

Analyst: JM. 6/9/95

Reviewer: D.A. 6/14/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0053	ATI I.D.:	505682-13
CLIENT:	PTI Environmental	DATE SAMPLED:	05/25/95
PROJECT #:	CA47-05-01	DATE RECEIVED:	05/31/95
PROJECT NAME:	Rico	DATE DIGESTED:	06/02/95
SAMPLE MATRIX:	SOIL	DATE ANALYZED:	06/07/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	26	6010
CADMIUM	6.6	6010
COPPER	124	6010
LEAD	1040	6010
MANGANESE	1990	6010
SILVER	9	6010
ZINC	1230	6010

000018

Analyst: 6/14/95

Reviewer: 6/14/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0054	ATI I.D.:	505682-14
CLIENT:	PTI Environmental	DATE SAMPLED:	05/25/95
PROJECT #:	CA47-05-01	DATE RECEIVED:	05/31/95
PROJECT NAME:	Rico	DATE DIGESTED:	06/02/95
SAMPLE MATRIX:	SOIL	DATE ANALYZED:	06/07/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	29	6010
CADMIUM	8.6	6010
COPPER	132	6010
LEAD	1970	6010
MANGANESE	1660	6010
SILVER	5	6010
ZINC	1610	6010

000019

Analyst: 6/14/95

Reviewer: 6/14/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0055	**ATI I.D.:**	505682-15
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/25/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/31/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	06/02/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/07/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	18	6010
CADMIUM	6.5	6010
COPPER	90	6010
LEAD	6070	6010
MANGANESE	1480	6010
SILVER	8	6010
ZINC	1030	6010

Analyst: 6/14/95

Reviewer: 6/14/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0056	**ATI I.D.:**	505682-16
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/25/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/31/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	06/02/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/07/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	29	6010
CADMIUM	6.8	6010
COPPER	111	6010
LEAD	960	6010
MANGANESE	1970	6010
SILVER	10	6010
ZINC	1340	6010

000021

Analyst: 6/14/95

Reviewer: 6/14/95

AnalyticalTechnologies,Inc.

METALS RESULTS

CLIENT I.D.:	SO0057	ATI I.D.:	505682-17
CLIENT:	PTI Environmental	DATE SAMPLED:	05/25/95
PROJECT #:	CA47-05-01	DATE RECEIVED:	05/31/95
PROJECT NAME:	Rico	DATE DIGESTED:	06/02/95
SAMPLE MATRIX:	SOIL	DATE ANALYZED:	06/07/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	19	6010
CADMIUM	10.3	6010
COPPER	96	6010
LEAD	675	6010
MANGANESE	564	6010
SILVER	3	6010
ZINC	2430	6010

Analyst: JLH 6/14/95

Reviewer: D.T. 6/19/95

Analytical**Technologies,**Inc.

METALS RESULTS

CLIENT I.D.:	SO0058	**ATI I.D.:**	505682-18
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/25/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/31/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	06/02/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/07/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	12	6010
CADMIUM	12.7	6010
COPPER	80	6010
LEAD	540	6010
MANGANESE	291	6010
SILVER	2	6010
ZINC	3470	6010

Analyst: [illegible] 6/14/95

Reviewer: [illegible] 6/14/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0059	**ATI I.D.:**	505682-19
CLIENT:	PTI Environmental	**DATE SAMPLED:**	05/25/95
PROJECT #:	CA47-05-01	**DATE RECEIVED:**	05/31/95
PROJECT NAME:	Rico	**DATE DIGESTED:**	06/02/95
SAMPLE MATRIX:	SOIL	**DATE ANALYZED:**	06/07/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	17	6010
CADMIUM	7.3	6010
COPPER	61	6010
LEAD	208	6010
MANGANESE	254	6010
SILVER	< 1	6010
ZINC	3100	6010

000024

Analyst: [signature] 6/14/95

Reviewer: [signature] 6/14/95

Analytical Technologies, Inc.

METALS RESULTS

CLIENT I.D.:	SO0060	ATI I.D.:	505682-20
CLIENT:	PTI Environmental	DATE SAMPLED:	05/25/95
PROJECT #:	CA47-05-01	DATE RECEIVED:	05/31/95
PROJECT NAME:	Rico	DATE DIGESTED:	06/02/95
SAMPLE MATRIX:	SOIL	DATE ANALYZED:	06/07/95
		DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	RESULTS	METHOD
ARSENIC	28	6010
CADMIUM	9.5	6010
COPPER	154	6010
LEAD	677	6010
MANGANESE	1780	6010
SILVER	6	6010
ZINC	1370	6010

Analyst: 6/14/95

Reviewer: 6/14/95

PTI ENVIRONMENTAL SERVICES

CHAIN OF CUSTODY RECORD/ SAMPLE ANALYSIS REQUEST FORM

2407

Page __ of __

Project: (Name and Number) Rico CA47-05-01

Samplers: (Signature) J. S Paul

Sampling Contact: LAURA Jones

Phone: (508) 636-4338

Ship Samples to: ATI

Attn: Vivian

Sample No.	Tag No.	Date	Time	Sample Matrix: Groundwater	Soil	Surface Water	Sediment	Other	Other	Concentration (L M H)	Composite or Grab	Analyses Requested: Site Metals						Extra Container	Archive	Remarks
S00023	77848	5/25/95	0930		X					L	C									Site Metals = Ag, Cd, Cu, Pb, Zn, Ag, Mn EPA method 6010/7000
S00024	77849		0935								G									
S00025	77850		0940								G									
S00026	77851		1020								C									
S00027	77852		1025								G									
S00028	77853		1030								G									
S00029	77854		1100								C									
S00030	77855		1105								G									
S00049	77875		1110								G									
S00050	77876		1130								C									
S00051	77877		1135								G									
S00052	77878		1140								G									
S00053	77879		1305								C									
S00054	77880	↓	1310		↓					↓	G	↓								

Method of Shipment: Federal Express

Condition of Samples Upon Receipt: _____

Custody Seal Intact: Yes ☐ No ☐ None ☐ Broken by: _____

Relinquished by: J. S Paul (Signature) Received by: _____ (Signature) Date/Time 25-May-95 0850

Relinquished by: _____ (Signature) Received by: _____ (Signature) Date/Time _____

Relinquished by: _____ (Signature) Received by Mobile Lab for Field Analysis: _____ (Signature) Date/Time _____

Received for Lab by: _____ (Signature) Date/Time _____

Distribution: Original and One Copy - Accompany Shipment; One Copy - Project File

FF Rev 1/91

PTI ENVIRONMENTAL SERVICES

CHAIN OF CUSTODY RECORD/ SAMPLE ANALYSIS REQUEST FORM

2408

Page __ of __

Project: (Name and Number) RICO CA47-05-01

Samplers: (Signature) Jeffrey S Paul

Sampling Contact: Laura Jones
Phone: (503) 636-4338
Ship Samples to: ATI

Attn: Vivian

Sample No.	Tag No.	Date	Time	Sample Matrix: Groundwater	Soil	Surface Water	Sediment	Other	Other	Concentration (L M H)	Composite or Grab	Analyses Requested: Site Metals						Extra Container	Archive	Remarks
S00055	77881	5/25/95	1315		X					L	6									Site Metals = As, Cd, Cu, Pb, Zn, Ag, Mn
S00056	77882		1305								C									EPA method 6010/7000
S00057	77883		1340								C									
S00058	77884		1345								6									
S00059	77885		1347								6									
S00060	77886		1415								C									

Method of Shipment: Federal Express

Condition of Samples Upon Receipt: _____

Custody Seal Intact: Yes ☐ No ☐ None ☐ Broken by: _____

Relinquished by: Jeffrey S Paul (Signature)

Relinquished by: _____ (Signature)

Relinquished by: _____ (Signature)

Received by: _____ (Signature) Date/Time 25-MAY-95 @ 0845

Received by: _____ (Signature) Date/Time _____

Received by Mobile Lab for Field Analysis: _____ (Signature) Date/Time _____

Received for Lab by: _____ (Signature) Date/Time _____

Distribution: Original and One Copy - Accompany Shipment; One Copy - Project File

FF Rev 1/91

Appendix E

Laboratory QA/QC Data Sheets

Section E-1

Laboratory Blank Spike Sample Results for Metals

Advanced Technologies, Inc.

METALS BLANK SPIKE RESULTS

METHOD:	6010	ATI I.D.:	506501
CLIENT:	PTI Environmental	QC SAMPLE:	Method Blank
PROJECT #:	CA47-05-01	DATE DIGESTED:	06/07/95
PROJECT NAME:	Rico	DATE ANALYZED:	06/08/95
SAMPLE MATRIX:	SOIL	DILUTION FACTOR:	1
		UNITS:	mg/kg

PARAMETER	RESULT	TRUE VALUE	% RECOV	LIMITS mg/Kg
ARSENIC	333	349	95	171-520
CADMIUM	42.3	46.9	90	24.4-67.6
COPPER	78	88.1	89	50.2-128
LEAD	45	52.4	86	27.8-74.4
MANGANESE	130	151	86	101-204
SILVER	151	154	98	69.4-225
ZINC	77	101	76	52.5-150

Analyst: [signature] 6/15/95

Reviewer: [signature]

Advanced Technologies, Inc.

METALS BLANK SPIKE RESULTS

METHOD:	7060	ATI I.D.:	506501
CLIENT:	PTI Environmental	QC SAMPLE:	Method Blank
PROJECT #:	CA47-05-01	DATE DIGESTED:	06/12/95
PROJECT NAME:	Rico	DATE ANALYZED:	06/14/95
SAMPLE MATRIX:	SOIL	DILUTION FACTOR:	1
		UNITS:	mg/kg

PARAMETER	RESULT	TRUE VALUE	% RECOV	LIMITS mg/Kg
ARSENIC	376	349	108	171-520

Analyst: [signature]

Reviewer: [signature]

Analytical Technologies, Inc.

METALS BLANK SPIKE RESULTS

METHOD:	6010	ATI I.D.:	505660
CLIENT:	PTI Environmental	QC SAMPLE:	Method Blank
PROJECT #:	CA47-05-01	DATE DIGESTED:	05/30/95
PROJECT NAME:	Rico	DATE ANALYZED:	05/30/95
SAMPLE MATRIX:	SOIL	DILUTION FACTOR:	1
		UNITS:	mg/kg

PARAMETER	RESULT	TRUE VALUE	% RECOV	LIMITS mg/Kg
ARSENIC	90	72.1	125	35-110
CADMIUM	64.7	61.6	105	36-86
COPPER	79	78.1	101	48-110
LEAD	56	50.9	110	27-71
MANGANESE	140	141	99	97-190
SILVER	80	71.7	112	29-105
ZINC	79	78.2	101	45-119

Analyst: 6/9/95

Reviewer:

000023

Analytical Technologies, Inc.

METALS BLANK SPIKE RESULTS

METHOD:	6010	**ATI I.D.:**	505661
CLIENT:	PTI Environmental	**QC SAMPLE:**	Method Blank
PROJECT #:	CA47-05-01	**DATE DIGESTED:**	05/31/95
PROJECT NAME:	Rico	**DATE ANALYZED:**	06/02/95
SAMPLE MATRIX:	SOIL	**DILUTION FACTOR:**	1
		UNITS:	mg/kg

PARAMETER	RESULT	TRUE VALUE	% RECOV	LIMITS mg/Kg
ARSENIC	80	72.1	111	35-110
CADMIUM	68.1	61.6	111	36-86
COPPER	82	78.1	105	48-110
LEAD	59	50.9	116	27-71
MANGANESE	150	141	106	97-190
SILVER	81	71.7	113	29-105
ZINC	85	78.2	109	45-119

Analyst: [signature] 6/9/95

Reviewer: [signature] 6/9/95

Analytical Technologies, Inc.

METALS BLANK SPIKE RESULTS

METHOD:	7060	**ATI I.D.:**	505661
CLIENT:	PTI Environmental	**QC SAMPLE:**	Method Blank
PROJECT #:	CA47-05-01	**DATE DIGESTED:**	06/06/95
PROJECT NAME:	Rico	**DATE ANALYZED:**	06/08/95
SAMPLE MATRIX:	SOIL	**DILUTION FACTOR:**	1
		UNITS:	mg/kg

PARAMETER	RESULT	TRUE VALUE	% RECOV	LIMITS mg/Kg
ARSENIC	380	349	109	171-520

Analyst: [signature] 6/9/95

Reviewer: [signature]

Advanced Technologies, Inc.

METALS BLANK SPIKE RESULTS

METHOD:	6010	ATI I.D.:	505682
CLIENT:	PTI Environmental	QC SAMPLE:	Method Blank
PROJECT #:	CA47-05-01	DATE DIGESTED:	06/02/95
PROJECT NAME:	Rico	DATE ANALYZED:	06/07/95
SAMPLE MATRIX:	SOIL	DILUTION FACTOR:	1
		UNITS:	mg/kg

PARAMETER	RESULT	TRUE VALUE	% RECOV	LIMITS mg/Kg
ARSENIC	83	72.1	115	35-110
CADMIUM	66.1	61.6	107	36-86
COPPER	81	78.1	104	48-110
LEAD	57	50.9	112	27-71
MANGANESE	140	141	99	97-190
SILVER	80	71.7	112	29-105
ZINC	81	78.2	104	45-119

Analyst: [signature] 6/14/95

Reviewer: [signature] 6/14/95

Section E-2

Matrix Spike Results for Metals

Analytical Technologies, Inc.

METALS SPIKE RESULTS

METHOD:	6010	ATI I.D.:	506501
CLIENT:	PTI Environmental	QC SAMPLE:	506501-3
PROJECT #:	CA47-05-01	DATE DIGESTED:	06/07/95
PROJECT NAME:	Rico	DATE ANALYZED:	06/08/95
SAMPLE MATRIX:	SOIL	DILUTION FACTOR	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	SAMPLE RESULT	SPIKE CONC	SPIKE RESULT	% RECOV		CONTROL LIMIT
ARSENIC	19	122	139	98		75-125%
CADMIUM	6.8	122	116	90		75-125%
COPPER	70	122	194	102		75-125%
LEAD	402	244	702	123		75-125%
MANGANESE	1130	122	1310	148	*	75-125%
SILVER	2	122	114	92		75-125%
ZINC	1240	122	1210	-25	*	75-125%

* Spike control limit not applicable. The sample level is greater than four times the spike level.

Analyst: [signature] 6/15/95

Reviewer: [signature]

Advanced Technologies, Inc.

METALS SPIKE RESULTS

METHOD:	7060	ATI I.D.:	506501
CLIENT:	PTI Environmental	QC SAMPLE:	506501-11
PROJECT #:	CA47-05-01	DATE DIGESTED:	06/12/95
PROJECT NAME:	Rico	DATE ANALYZED:	06/14/95
SAMPLE MATRIX:	SOIL	DILUTION FACTOR	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	SAMPLE RESULT	SPIKE CONC	SPIKE RESULT	% RECOV	CONTROL LIMIT
ARSENIC	16.3	6.3	22.4	97	75-125%

Analyst: 6/14/95

Reviewer:

Analytical Technologies, Inc.

METALS SPIKE RESULTS

METHOD:	6010	ATI I.D.:	505660
CLIENT:	PTI Environmental	QC SAMPLE:	505660-1
PROJECT #:	CA47-05-01	DATE DIGESTED:	05/30/95
PROJECT NAME:	Rico	DATE ANALYZED:	05/30/95
SAMPLE MATRIX:	SOIL	DILUTION FACTOR	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	SAMPLE RESULT	SPIKE CONC	SPIKE RESULT	% RECOV		CONTROL LIMIT
		~~Jun 23, 95~~				
ARSENIC	~~30~~ 27	116	~~140~~ 142	95		75-125%
CADMIUM	4.1	116	107	89		75-125%
COPPER	40	116	148	93		75-125%
LEAD	184	233	379	84		75-125%
MANGANESE	1130	116	1180	43	*	75-125%
SILVER	< 1	116	106	91		75-125%
ZINC	647	116	743	83		75-125%

* Spike control limit not applicable. The sample level is greater than four times the spike level.

Analyst: 6/9/95

Reviewer:

Anaivticci**Technologies,**Inc.

METALS SPIKE RESULTS

METHOD:	6010	**ATI I.D.:**	505661
CLIENT:	PTI Environmental	**QC SAMPLE:**	505661-1
PROJECT #:	CA47-05-01	**DATE DIGESTED:**	05/31/95
PROJECT NAME:	Rico	**DATE ANALYZED:**	06/02/95
SAMPLE MATRIX:	SOIL	**DILUTION FACTOR**	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	SAMPLE RESULT	SPIKE CONC	SPIKE RESULT	% RECOV		CONTROL LIMIT
			N Jun 23, 1995			
ARSENIC	~~40~~ 39	119	~~150~~ 149	92		75-125%
CADMIUM	1.8	119	106	88		75-125%
COPPER	71	119	180	92		75-125%
LEAD	351	238	549	83		75-125%
MANGANESE	924	119	1030	89	*	75-125%
SILVER	3	119	109	89		75-125%
ZINC	258	119	367	92		75-125%

* Spike control limit not applicable. The sample level is greater than four times the spike level.

Analyst: [signature] 6/9/95

Reviewer: [signature] 6/9/95

Anaivricci**Technologies**,Inc.

METALS SPIKE RESULTS

METHOD:	7060	**ATI I.D.:**	505661
CLIENT:	PTI Environmental	**QC SAMPLE:**	505661-12
PROJECT #:	CA47-05-01	**DATE DIGESTED:**	06/06/95
PROJECT NAME:	Rico	**DATE ANALYZED:**	06/08/95
SAMPLE MATRIX:	SOIL	**DILUTION FACTOR:**	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	SAMPLE RESULT	SPIKE CONC	SPIKE RESULT	% RECOV		CONTROL LIMIT
ARSENIC	14.0	6.3	23.5	151	F	75-125%

F - Out of limits due to matrix interference.

Analyst: [signature] 6/9/95

Reviewer: [signature] 6/9/95

Analytical Technologies, Inc.

METALS SPIKE RESULTS

METHOD:	6010	**ATI I.D.:**	505682
CLIENT:	PTI Environmental	**QC SAMPLE:**	505682-1
PROJECT #:	CA47-05-01	**DATE DIGESTED:**	06/02/95
PROJECT NAME:	Rico	**DATE ANALYZED:**	06/07/95
SAMPLE MATRIX:	SOIL	**DILUTION FACTOR**	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	SAMPLE RESULT	SPIKE CONC	SPIKE RESULT	% RECOV		CONTROL LIMIT
ARSENIC	31	127	156	98		75-125%
CADMIUM	23.7	127	146	96		75-125%
COPPER	221	127	326	83		75-125%
LEAD	1760	253	2120	142	*	75-125%
MANGANESE	1650	127	1950	236	*	75-125%
SILVER	12	127	138	99		75-125%
ZINC	2860	127	3140	220	*	75-125%

* Spike control limit not applicable. The sample level is greater than four times the spike level.

Analyst: [signature] 6/14/95

Reviewer: [signature] 6/14/95

Section E-3

Laboratory Duplicate Results for Metals

Analytical Technologies, Inc.

METALS DUPLICATE RESULTS

METHOD:	6010	ATI I.D.:	506501
CLIENT:	PTI Environmental	QC SAMPLE:	506501-3
PROJECT #:	CA47-05-01	DATE DIGESTED:	06/07/95
PROJECT NAME:	Rico	DATE ANALYZED:	06/08/95
SAMPLE MATRIX:	SOIL	DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	SAMPLE RESULT	DUPLICATE RESULT	RPD		RPD CONTROL LIMIT
ARSENIC	19	24	23	*	20
CADMIUM	6.8	6.9	1		20
COPPER	70	70	0		20
LEAD	402	407	1		20
MANGANESE	1130	1140	<1		20
SILVER	2	2	0		20
ZINC	1240	1200	3		20

* Duplicate control limit not applicable. The sample is less than five times the MRL.

Analyst: [signature] 6/15/95

Reviewer: [signature]

Analytical Technologies, Inc.

METALS DUPLICATE RESULTS

METHOD:	7060	ATI I.D.:	506501
CLIENT:	PTI Environmental	QC SAMPLE:	506501-11
PROJECT #:	CA47-05-01	DATE DIGESTED:	06/12/95
PROJECT NAME:	Rico	DATE ANALYZED:	06/14/95
SAMPLE MATRIX:	SOIL	DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	SAMPLE RESULT	DUPLICATE RESULT	RPD	RPD CONTROL LIMIT
ARSENIC	16.3	17.4	7	20

Analyst: [signature] 6/15/95

Reviewer: [signature]

Analytical Technologies, Inc.

METALS DUPLICATE RESULTS

METHOD:	6010	**ATI I.D.:**	505660
CLIENT:	PTI Environmental	**QC SAMPLE:**	505660-1
PROJECT #:	CA47-05-01	**DATE DIGESTED:**	05/30/95
PROJECT NAME:	Rico	**DATE ANALYZED:**	05/30/95
SAMPLE MATRIX:	SOIL	**DILUTION FACTOR:**	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	SAMPLE RESULT	DUPLICATE RESULT	RPD	RPD CONTROL LIMIT
ARSENIC	~~30~~ 29 Jun 2, 95	~~30~~ 32 Jun 2 95	0	20
CADMIUM	4.1	3.4	19	20
COPPER	40	48	18	20
LEAD	184	186	1	20
MANGANESE	1130	1130	0	20
SILVER	< 1	1	NC	20
ZINC	647	648	< 1	20

NC - Not Calculable.

Analyst: [signature] 6/9/95

Reviewer: [signature]

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Analytical Technologies, Inc.

METALS DUPLICATE RESULTS

METHOD:	6010	ATI I.D.:	505661
CLIENT:	PTI Environmental	QC SAMPLE:	505661-1
PROJECT #:	CA47-05-01	DATE DIGESTED:	05/31/95
PROJECT NAME:	Rico	DATE ANALYZED:	06/02/95
SAMPLE MATRIX:	SOIL	DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	SAMPLE RESULT	DUPLICATE RESULT	RPD	RPD CONTROL LIMIT
ARSENIC	~~40~~ 39	~~40~~ 34 (Jun 23, 95)	0	20
CADMIUM	1.8	1.6	12	20
COPPER	71	72	1	20
LEAD	351	372	6	20
MANGANESE	924	997	8	20
SILVER	3	3	0	20
ZINC	258	260	< 1	20

Analyst: [signature] 6/9/95

Reviewer: D.F. 6/9/95

Analytical Technologies, Inc.

METALS DUPLICATE RESULTS

METHOD:	7060	ATI I.D.:	505661
CLIENT:	PTI Environmental	QC SAMPLE:	505661-12
PROJECT #:	CA47-05-01	DATE DIGESTED:	06/06/95
PROJECT NAME:	Rico	DATE ANALYZED:	06/08/95
SAMPLE MATRIX:	SOIL	DILUTION FACTOR:	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	SAMPLE RESULT	DUPLICATE RESULT	RPD	RPD CONTROL LIMIT
ARSENIC	14.0	14.7	5	20

Analyst: JLh. 6/9/95

Reviewer: N.t 6/9/95

Anamatrix Technologies, Inc.

METALS DUPLICATE RESULTS

METHOD:	6010	**ATI I.D.:**	505682
CLIENT:	PTI Environmental	**QC SAMPLE:**	505682-1
PROJECT #:	CA47-05-01	**DATE DIGESTED:**	06/02/95
PROJECT NAME:	Rico	**DATE ANALYZED:**	06/07/95
SAMPLE MATRIX:	SOIL	**DILUTION FACTOR:**	1
		UNITS:	mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	SAMPLE RESULT	DUPLICATE RESULT	RPD	RPD CONTROL LIMIT
ARSENIC	31	28	10	20
CADMIUM	23.7	24.8	5	20
COPPER	221	217	2	20
LEAD	1760	1820	3	20
MANGANESE	1650	1680	2	20
SILVER	12	12	0	20
ZINC	2860	2940	3	20

Analyst: 6/14/95

Reviewer: